

**THE FISCAL YEAR 2019 DEPARTMENT OF ENERGY
BUDGET**

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED FIFTEENTH CONGRESS
SECOND SESSION

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¹ The committee did not receive a response to Mr. Perry's submitted questions for the record by the time of printing.

² The information can be found at: <https://docs.house.gov/meetings/IF/IF03/20180412/108114/HHRG-115-IF03-20180412-SD049.pdf>.

THE FISCAL YEAR 2019 DEPARTMENT OF ENERGY BUDGET

THURSDAY, APRIL 12, 2018

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:00 a.m., in room 2123 Rayburn House Office Building, Hon. Fred Upton (chairman of the subcommittee) presiding.

Members present: Representatives Upton, Olson, Barton, Shimkus, Latta, Harper, McKinley, Kinzinger, Griffith, Johnson, Long, Bucshon, Flores, Mullin, Hudson, Cramer, Walberg, Duncan, Walden (ex officio), Rush, McNerney, Peters, Green, Doyle, Castor, Sarbanes, Tonko, Loeb sack, Schrader, Kennedy, Butterfield, and Pallone (ex officio).

Staff present: Mike Bloomquist, Staff Director; Samantha Bopp, Staff Assistant; Daniel Butler, Staff Assistant; Kelly Collins, Legislative Clerk, Energy/Environment; Wyatt Ellertson, Professional Staff, Energy/Environment; Adam Fromm, Director of Outreach and Coalitions; Jordan Haverly, Policy Coordinator, Environment; Ben Lieberman, Senior Counsel, Energy; Mary Martin, Chief Counsel, Energy/Environment; Drew McDowell, Executive Assistant; Brandon Mooney, Deputy Chief Counsel, Energy; Mark Ratner, Policy Coordinator; Annelise Rickert, Counsel, Energy; Dan Schneider, Press Secretary; Peter Spencer, Professional Staff Member, Energy; Jason Stanek, Senior Counsel, Energy; Austin Stonebraker, Press Assistant; Hamlin Wade, Special Advisor, External Affairs; Everett Winnick, Director of Information Technology; Andy Zach, Senior Professional Staff Member, Environment; Priscilla Barbour, Minority Energy Fellow; Jeff Carroll, Minority Staff Director; Jean Fruci, Minority Energy and Environment Policy Advisor; Tiffany Guarascio, Minority Deputy Staff Director and Chief Health Advisor; Zach Kahan, Minority Outreach and Member Service Coordinator; Rick Kessler, Minority Senior Advisor and Staff Director, Energy and Environment; Jourdan Lewis, Minority Staff Assistant; John Marshall, Minority Policy Coordinator; Alexander Ratner, Minority Policy Analyst; Tim Robinson, Minority Chief Counsel; Tuley Wright, Minority Energy and Environment Policy Advisor; C.J. Young, Minority Press Secretary; and Catherine Zander, Minority Environment Fellow.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Good morning, everyone. So it has been 6 months to the day, Mr. Secretary, since you last appeared here and I certainly welcome you back. We all do. And at that October 12th hearing we talked about your efforts to refocus the Department's limited budget resources to address what you see as the most pressing challenges.

You outlined a number of priorities which included promoting the Nation's energy security, strengthening the Nation's national security and nuclear deterrent, spurring innovation, and yes, cleaning up the legacy Cold War sites. The proposed \$30.6 billion budget that we are discussing today reflects those priorities.

There is \$15 billion for the National Nuclear Security Administration which would continue critical spending for DOE's defense and national security programs at a level some \$2 billion higher than the previous administration spending. The budget maintains about \$5.5 billion dollars for the Office of Science and its fundamental and basic research programs which is the seed bed for innovation. That is up somewhat from the previous administration spending. And there is \$6.6 billion for the Office of Environmental Management, the highest level in some 15 years.

Concerning the various energy programs, the budget provides \$2.5 billion which represents a substantial cut, overall, from the previous spending across these programs. And I would encourage you to continue working with the committee to identify additional authorities that you need to be more effective and I know that you will do that.

We also need to recognize that as our energy systems, market mechanisms, and Federal and State environmental policies become more entangled, existing and emerging hazards to energy systems may have far more reaching consequences than we may be accustomed to. For example, a successful cyber attack on certain business systems would certainly undermine confidence in energy trading systems even if it doesn't pose a threat to physical operations.

A major cold event like January's bomb cyclone can lead to severe shortages in power or energy when people need it most or, as testimony at our second modernization hearing this year noted, factors that lead to the decline in our Nation's nuclear infrastructure can undermine long-term national security and the international leadership on nonproliferation and safety.

So these energy policies and energy securities present serious challenges, no question, challenges that transcend our current market setup. It is essential for you as Secretary of Energy to survey energy and national security risks, to identify the implication of our existing energy policy and energy infrastructure, recommend appropriate action, and help us make more informed policy decisions. Your budget should provide the resources for you to do that work and your leadership should focus on tackling those large and consequential questions.

I look forward to this morning's discussions and would yield for an opening statement to the ranking member of the Energy Subcommittee, Mr. Rush from Illinois.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

It has been 6 months to the day since you last appeared here, Secretary Perry, and I welcome you back. At our October 12 hearing, we talked about your efforts to refocus the Department's limited budget resources to address what you see as the most pressing challenges.

You outlined several priorities, which included: promoting the Nation's energy security, strengthening the Nation's national security and nuclear deterrent, spurring innovation, and cleaning up the legacy Cold War sites.

The proposed \$30.6 billion budget we are discussing today reflects those priorities. There is \$15 billion for the National Nuclear Security Administration, which would continue critical spending for DOE's defense and national security programs at a level some \$2 billion higher than the previous Administration's spending.

The budget maintains about \$5.4 billion for the Office of Science and its fundamental and basic research programs, which is the seedbed for innovation. This is up somewhat from the previous Administration's spending. And there is \$6.6 billion for the Office of Environmental Management—the highest level in 15 years.

Concerning the various energy programs, the budget provides \$2.5 billion, which represents a substantial cut overall from previous spending across these programs. This has raised questions and concerns from Congress, which I am sure you are prepared to discuss today.

The questions the budget raises are important. Examining spending priorities in an era of constrained budgets, identifying ways to get more out of each taxpayer dollar spent, focusing resources on the most essential and pressing problems are critical for successful Secretarial management.

This Committee's work on DOE modernization is intended to strengthen your ability as Secretary to manage and execute the Department's missions.

Our most critical modernization priority right now is to make sure the Department can confront the emerging threats to our nation's energy security.

This involves enhancing the Department's cybersecurity and emergency response capabilities, which are needed for a wide range of emerging threats to our energy systems.

Your new office to focus on cybersecurity and energy emergencies makes sense. It is responsive to concerns this Committee has raised over the years that DOE's energy security functions were buried in programs with other priorities.

While this action is a positive step, I think the Department and policy makers must do more to address emerging threats and other hazards to our energy systems—natural and man-made.

This is why we are moving several bi-partisan bills to strengthen and clarify DOE's cyber security and emergency authorities through the Committee process. And I would encourage you to continue working with the Committee to identify additional authorities you need to be more effective.

We also need to recognize that, as our energy systems, market mechanisms, and Federal and State environmental policies become more entangled, existing and emerging hazards to energy systems may have more far reaching consequences than we may be accustomed to.

For example, a successful cyber-attack on certain business systems could undermine confidence in energy trading systems, even if it doesn't pose a threat to physical operations. A major cold event, like January's "bomb cyclone," can lead to severe shortages in power or energy when people need it most. Or, as testimony at our second modernization hearing this year noted, factors that lead to the decline in our nation's nuclear infrastructure can undermine long term national security and international leadership on nonproliferation and safety.

These energy policy and energy security present serious challenges—challenges that transcend our current market set up. It is essential for you, as the Secretary of Energy to survey energy and national security risks, to identify the implications of our existing energy policies and energy infrastructure, recommend appropriate action—and help us make more informed policy decisions.

Your budget should provide the resources for you to do this work. And your leadership should focus on tackling these large and consequential questions. I look forward to this morning's discussion.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. Good morning. I want to thank you, Mr. Chairman, and I want to welcome you, Mr. Secretary. And, Mr. Secretary, I really like how you entered into the room. You came over and shook hands on our side of the aisle, here, and your personal touch means a lot. And in this era of extremism on both sides, really, the human touch you exhibited means a lot to me and I want to thank you for it.

Mr. Secretary, I look forward to working with your office to ensure that the Department moves the Nation's energy policies forward in a way that benefits all Americans and, indeed, benefits all communities. History has shown all of us the importance of having people with different perspectives and different life experiences at the proverbial table when important and consequential decisions are initially being considered.

So when I talk about having diversity in leadership positions at DOE, it is not just for the sake of having diversity. But rather, it helps to ensure that specific groups or communities aren't being excluded whether it is intentional or not. When decisions are being made regarding which universities are awarded research grants, or which businesses can receive contracts, or even how a specific policy might impact a particular community, having a sense of diversity, having real diversity in demographics and in opinion, helps to make sure certain groups aren't being left out. So, Mr. Secretary, I look forward to meeting with you soon to discuss your thoughts on this very issue and to see how we might be able to work together to make sure that the Department is providing aid and resources to all communities in a way that is sustainable regardless of the administration that is in office.

Mr. Secretary, besides the objective of making sure the Department elects inclusive policies I also have strong views in regards to the fiscal year 2019 budget proposal that was put forth by the administration. Specifically, this budget proposal will cut the Office of Energy Efficiency and Renewable Energy by 70 percent from fiscal year 2018 levels with over \$600 million of these reductions coming from energy efficiency programs.

These proposed cuts are a nonstarter as far as I am concerned. They would severely and negatively impact low-income families throughout my home State of Illinois and the Nation by eliminating extremely popular and much-needed initiatives such as the Weatherization Assistance Program and the STAR ENERGY program. Additionally, the proposal would increase funding for the Office of Science, which funds the 17 national laboratories, by \$869 million from fiscal year 2018 levels, eliminating the Advanced Research Program Agency, slash, Energy, or ARPA-E.

The budget proposal would also get rid of all DOE loan programs including the Title XVII innovative clean energy projects loan program and the Advanced Technology Vehicles Manufacturing loan program. Mr. Secretary, this fiscal year 2019 budget proposal reflects exactly the wrong vision for the nNation and it would take us backwards on critical issues like climate change, while also hampering American innovation and global competitiveness.

Mr. Secretary, again I want to thank you for being here and I look forward to working with you to address these important issues going forward. With that, I yield back the balance of my time.

Mr. UPTON. The gentleman yields back. The chair would recognize the chair of the full committee for an opening statement, the gentleman from the good State of Oregon, Mr. Walden, for 5 minutes.

Mr. WALDEN. Last time it was the great State of Oregon.

Mr. UPTON. I know.

Mr. WALDEN. I don't know how we slid downhill.

Mr. UPTON. Michigan is the great State. Oregon is a good State.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Oh, I see.

I want to start of course by welcoming the Secretary and Mr. Vonglis, thank you both for being here. I believe it is the Secretary's second visit before our committee and we appreciate that. We like regular visitors here. We don't give, you know, Hilton Honor points or anything for your stays, but we do appreciate your being here and especially to discuss the fiscal year 2019 budget request from the President.

As we have explored through the DOE modernization hearings, lots has changed at the Department of Energy over the 40 years since it was first created especially on the national security and energy front. And I know that is a passion of yours on cybersecurity, Mr. Secretary, and protecting our energy grid, our gas pipeline system and all from attack. Under your leadership, Mr. Secretary, the Department is undertaking a very ambitious set of reforms to strengthen our energy security, to reduce regulatory burdens, and to spur economic growth in America. Today's hearing will provide you with an opportunity to update the committee on the progress made toward achieving those goals and to discuss how the budget request will help further DOE's mission to advance the national economic and energy security of the United States.

As we have discussed before, DOE and Congress must work cooperatively to adapt management and mission priorities to reflect the realities of today's world. At my direction, Chairman Upton and Vice Chairman Barton have been working with Mr. Rush and others in terms of how do we organize the Department of Energy for the next generation. And we appreciate that work that is underway and we also appreciate the work of your team, Mr. Secretary, to give us counsel and guidance from time to time as we work on legislation here to strengthen the physical security and cybersecurity of the Nation's electric grid and pipelines and streamline the process for reviewing LNG export applications.

The Department of Energy has been a good partner and we appreciate the testimony and your assistance in fine tuning these bills. It is my expectation this constructive approach will continue to pay off as we dig deeper to address DOE's core missions of nuclear energy, environmental cleanup, and mission-enabling science.

The President's fiscal year 2019 budget requests \$30.9 billion for the Department to deliver on its commitments to the American people. Almost half that budget would go toward the Department's

nuclear security mission, roughly a quarter would be spent on environmental management, the remaining amount would go toward DOE's energy and science programs. I am pleased to see that the budget also includes funding to fulfill the Department of Energy's legacy cleanup responsibilities including at the Hanford Site.

Now it is located along the Columbia River, you and I both went there last August and I appreciated your doing that and touring McNary Dam as well. The cleanup work at Hanford requires deliberate, careful, and very clear oversight by the Department of Energy and we will continue to monitor the projects, particularly involving worker safety.

As we talked before the hearing, Mr. Secretary, I would love to explore your views on what has happened recently there with some potential radiation emissions from dust and the effect on workers and the overall cleanup. While many technical and logistical challenges remain, we are beginning to see some progress and I trust your renewed focus on Hanford will accelerate the results of cleaning up that mess.

I am pleased the budget includes funding to restart Yucca Mountain project—Mr. Shimkus also probably shares some happiness with that move—so the waste currently sited at Hanford and around the country will be permanently disposed of. That remains a big priority for this committee. We will get Yucca legislation to the floor. We passed it out here on a big bipartisan vote, we want to get it down to the President's desk.

This year's budget request is notable in its emphasis on energy security, in particular in combating physical and cyber attacks to our nation's energy infrastructure. As the sector-specific agency for cybersecurity for the energy sector, the Department of Energy must ensure unity of effort and serve as the day-to-day referral interface for the prioritization and coordination of activities across the government.

As I said, I got a firsthand look at some of DOE's testing capabilities and unique facilities and advanced tools during a recent visit to the Idaho National Laboratory in Idaho Falls. Mike Simpson, my colleague from Idaho, and I were there. Your experts are working to protect our economy and safety of our citizens from hackers who are waging a continuous cyber war on our critical infrastructure in this country.

Just last month for the first time ever, the Department of Homeland Security and the FBI jointly issued an alert formally accusing the Russian government of a widespread hacking campaign targeting a wide swath of our energy infrastructure including our grid, pipelines, and nuclear facilities. I commend you, Mr. Secretary, for taking this threat as seriously as you do and for your efforts to improve the Department's ability to detect and respond to these emergency threats.

While the Department works to keep the lights on in the event of a cyber attack, it is also working to improve the resiliency and reliability of the electric grid in the face of a rapidly changing power generation mix. So, Mr. Secretary, we appreciate that. I will have questions for you about making sure that the Bonneville Power Administration remains a vibrant part of the Northwest in-

frastructure. I know the administration may have a different view on that but we will overcome that.

So thank you, Mr. Secretary, delighted to have you here, and I yield back the balance of my time.

[The prepared statement of Mr. Walden follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

I'd like to begin by welcoming Secretary Perry to his second appearance before the Energy and Commerce Committee to discuss the President's Fiscal Year 2019 Budget Request for the Department of Energy. As we've explored through our "DOE Modernization" hearings, a lot has changed since Congress created the department over 40 years ago—especially on the national security and energy security front.

Under the Secretary's leadership, the department is undertaking ambitious reforms to strengthen our energy security, reduce regulatory burdens, and spur economic growth. Today's hearing will provide the secretary with an opportunity to update the committee on the progress made toward achieving the goals he set for the department, and to discuss how the budget request will help further DOE's mission to advance the national, economic, and energy security of the United States.

As we've discussed before, DOE and Congress must work cooperatively to adapt its management and mission priorities to reflect the realities of today. At my direction, Chairman Upton and Vice Chairman Barton have begun this work, and it's starting to bear fruit. Over the last few months, the committee has held legislative hearings on bipartisan bills to enhance DOE's emergency response capabilities, strengthen the physical security and cybersecurity of the nation's electric grid and pipelines, and streamline the process for reviewing LNG export applications. DOE has been a good partner, contributing testimony and technical assistance to help fine-tune these bills. It's my expectation that this constructive approach will continue to pay off as we dig deeper to address DOE's core missions of nuclear energy, environmental cleanup, and mission-enabling science.

The President's FY 2019 budget requests \$30.9 billion dollars for the Department of Energy to deliver on its commitments to the American people. Almost half of the budget would go toward the department's nuclear security mission, roughly a quarter would be spent on environmental management, and the remaining amount would go toward DOE's energy and science programs.

I'm pleased to see that the budget also includes funding to fulfill DOE's legacy cleanup responsibilities, including the Hanford Site, which is located just across the Columbia River from my constituents. The secretary and I toured Hanford together last year. The cleanup work at Hanford requires deliberate oversight by DOE and we will continue to monitor the projects, particularly when involving worker safety. While many technical and logistical challenges remain, we're beginning to see some progress and I trust that Secretary Perry's renewed focus on Hanford will accelerate these results. I'm pleased the budget includes funding to restart the Yucca Mountain project, so the waste currently sitting at Hanford, and around the country, will be permanently disposed.

This year's budget request is notable in its emphasis on energy security, in particular, combating physical and cyber-attacks to our nation's energy infrastructure. As the sector-specific agency for cybersecurity for the energy sector, DOE must ensure unity of effort and serve as the day-to-day federal interface for the prioritization and coordination of activities across government.

I got a firsthand look at some of DOE's testing capabilities, unique facilities, and advanced tools during my recent tour of Idaho National Laboratory, where our experts are working to protect our economy and the safety of our citizens from the hackers who are waging cyberwar on our critical infrastructure. Just last month, for the first time ever, the Department of Homeland Security and the FBI jointly issued an alert, formally accusing the Russian government of a widespread hacking campaign targeting a wide swath of our energy infrastructure, including our grid, pipelines, and nuclear facilities. I commend the Secretary for taking this threat seriously, and for his efforts to improve the department's ability to detect and respond to these emerging threats.

While the department works to keep the lights on in the event of a cyber-attack, it is also working to improve the resiliency and reliability of the electric grid in the face of a rapidly changing power generation mix. Congress has provided the secretary with a variety of tools to address grid reliability, including Emergency Order authority under Section 202(c) of the Federal Power Act to avert a power crisis. While this authority has been rarely used in the past, DOE has already received

two requests within the past 12 months, including a potentially precedent-setting request involving struggling coal and nuclear plants in the Midwest.

As I've stated before, I support an all-of-the-above approach, and feel strongly that a diverse generation mix is essential to our nation's energy security. I look forward to continue working with Secretary Perry as he weighs these important issues.

Mr. UPTON. The gentleman yields back. The chair would recognize the ranking member of the full committee, the gentleman from New Jersey, Mr. Pallone, for 5 minutes.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Mr. Chairman.

Secretary Perry, welcome back. I hope you feel welcome, because judging by President Trump's fiscal year 2019 budget, I think here in Congress we have more confidence in you and your Department than in the President. I say that because we recently passed a bipartisan omnibus appropriations bill that not only increased funding for many DOE programs above the President's budget request, but also increased funding above 2017 enacted levels.

And I am glad that Congress is going on record that it will not accept these severe cuts being proposed by the President. I don't envy the position you are in today, having to defend a Department of Energy budget that slashes funding for clean energy research, walks away from popular efficiency programs that save consumers money, eliminates programs that fund cutting-edge energy research, and helps low-income families weatherize their homes.

And this budget also slashes federal investments in DOE programs that help mitigate carbon emissions which are, as the science clearly shows, the main drive of climate change. The President's budget proposes a particularly crippling 70 percent cut to DOE's Office of Energy Efficiency and Renewable Energy and that office has succeeded in growing clean energy technology deployment, developing cost-saving energy efficiency programs, and promoting advanced vehicles and alternate fuels. If we put the brakes on clean energy research, development, and deployment, we risk falling behind countries like China that are prioritizing clean energy investments that are spurring new industries and creating jobs and this is not a way to grow and expand our economy, in my opinion.

I am also very concerned about the budget cuts to efficiency programs. My frustration is compounded by the fact that this administration has been slow-walking the publication of four product efficiency standards that were completed over a year ago. I simply do not understand why you would block the completion of these standards which are cost effective and will save consumers money. The standards have also been fully negotiated. The U.S. District Court has ordered DOE to finally publish these standards, but the Trump administration is currently wasting taxpayer money to appeal the order. The law requires the DOE to publish these standards and it should be done immediately.

The budget proposal also makes several misguided changes to the structure of the power marketing administrations, PMAs. It directs the Federal Government to sell off a large portion of the

transmission system in several PMAs; it also requires the PMAs to charge consumers for electricity based on the rates of comparable private utilities instead of simply recouping costs. And both of these actions, I think, are ill-conceived and will lead to higher electricity bills for those who purchase electricity from a PMA and that is clearly bad for consumers.

Another proposal I find especially foolish is the President's plan to abolish the Northeast Gasoline Supply Reserve which was launched after several gasoline shortages during Superstorm Sandy. The administration's reasoning for this shortsighted proposal that the reserve, and I quote, has not been utilized since its establishment. By that logic, we might as well discard the Federal Government's stockpile of smallpox vaccines because the vaccines have not been used since the stockpile was created. And I have introduced legislation to authorize the reserve. I would prefer to work with you, Mr. Secretary, to perfect and move that legislation, but I certainly will fight any attempt to eliminate the reserve.

And, finally, I must address the recent request the Department received from FirstEnergy and Murray Energy to use section 202(c) of the Federal Power Act to keep the companies' cash-strapped coal and nuclear plants operational. Mr. Secretary, judging by your recent statements and those of Assistant Secretary Walker, it sounds like you appreciate that section 202(c) is for serious grid emergencies as explicitly designed in the statute and not designed to bail out power plants that are losing money.

So this request by FirstEnergy, in my opinion, is like calling 911 because your credit card got declined. It has united Republicans, Democrats, energy companies and environmental groups, regulators, and consumers in opposition because it is clearly and simply not just inappropriate but, I think, illegal.

So again thank you for testifying before our committee today. I know you were here before and, believe me, we appreciate the fact that you as a Cabinet member don't hesitate to come here. Thank you.

I yield back, Mr. Chairman.

Mr. UPTON. The gentleman yields back. And I would just echo many of the positive comments from both sides of aisle that we do appreciate your presence here and your frequent visits to Capitol Hill and ability to reach out again to both sides. And, Mr. Secretary, you are recognized to give an opening statement and then we will proceed with questions.

**STATEMENT OF THE HONORABLE RICK PERRY, SECRETARY,
U.S. DEPARTMENT OF ENERGY**

Secretary PERRY. Thank you, Mr. Chairman. And Chairman Walden, thank you for your comments. And Ranking Member Rush and along to each of you, it is my privilege to be back in front of you again. And, Mr. Rush, just as a side comment, I hope that we all can reflect a real civility and, frankly, brotherly and sisterly love as we go forward in this process. And it is my honor to get to serve this country once again in this role that I have today and it is a great privilege to be interacting with each of you as public servants. You all sacrifice to serve this country and I am greatly appreciative of that.

This budget represents a request to the American people through their representatives in Congress to fund the priorities of this Department. It underscores DOE's commitment to stewardship, accountability, service; I hope that our interactions with you and other committees of Congress over the past year have underscored that commitment. Our DOE leadership team has appeared before congressional committees 23 times in 2017 and we are proud of the strong relationship that we have built on the Hill.

When I first appeared before this committee last year, I committed DOE to advancing several key objectives. I noted that we needed to accelerate our exascale computing capability; to modernize our nuclear arsenal; to continue to address the environmental legacy of the Cold War; advance domestic energy production; better protect our energy infrastructure. This fiscal year 2019 \$30.6 billion budget request for the Department seeks to advance these and other goals.

Mr. Chairman, DOE's supercomputing and other advanced technology capabilities play a crucial role in combating threats to our energy and national security infrastructure. As this committee knows from its strong bipartisan support of the 21st Century Cures legislation, these supercomputing assets are also critical to finding cures for cancer, cardiovascular disease, and other health challenges.

In the Precision Medicine Initiative section of the Cures Act, section 2011, you encouraged the Secretary of Health and Human Services to coordinate with the Secretary of Energy to identify and address the technology needs for the initiative. So last week I met with HHS Assistant Secretary for Health and the Surgeon General to discuss how we can work together to address these goals and further utilize our capacity to address similar health problems faced by American veterans.

Mr. McNerney, you and I had talked about this with a little more specificity and I hope to be able to come up and sit down with you because I know that you have a very real interest in this particular area and I just think there is extraordinary opportunity here.

On a parallel track, DOE has been working with the VA to utilize information from millions of cancer patients' records to determine optimal treatment. We are now bringing these tools to bear on veterans' health issues ranging from traumatic brain injury to suicide prevention, prostate cancer, cardiovascular disease; in addition, we recently announced a major RFP to accelerate our efforts to regain American leadership in supercomputing. The machines we will build and will deploy will be 50 to 100 times faster than any of our current computers and will hold immense potential to help to answer the most challenging questions in science and medicine and national security.

Regarding national security let me say that the United States Government has no greater or more solemn duty than to protect its citizens. Because nuclear deterrents are critical to our defense, last year we promised a much-needed upgrading of our arsenal. This year we requested an 8.3 percent increase to align ourselves with the President's Nuclear Posture Review and the National Security Strategy. We also focused on addressing the environmental legacy

left at the Department's sites and this year we are requesting additional funds for that obligation.

We also have a duty to advance American energy independence. Thanks to ingenuity, innovation, we are on the cusp of realizing that objective. In the coming years we will produce an abundance of energy from a diverse number of sources. Not only are we becoming energy independent, we are exporting to our friends, our allies, and our partners. Just last year we became a net exporter of natural gas and today we are exporting LNG to 27 countries on five different continents.

And as our economy expanded and the energy development reached new heights, our environment became cleaner. From 2005 to 2017, we led the world in reducing carbon emissions cutting them by 14 percent over that time. The lesson is clear, we don't have to choose between growing our economy and caring for our environment and that is the heart of the new energy realism that I recently described.

To drive further, energy innovations we are requesting continued funding for our energy program offices as well as more funding for research in fossil fuels and nuclear power including small nuclear reactors, the modular reactors. At the Department we have a duty to ensure our energy actually delivers to its place of use without interruption. Our national and economic security depend on a diversity of fuel sources and the ability to deliver electricity where and when consumers need it.

My greatest focus as the Secretary of Energy is to ensure that our grid is not only reliable but that it is resilient. That is why last year I promised to step up our efforts to protect and maintain America's energy infrastructure in the face of all hazards. The devastation caused by the 2017 hurricanes highlighted the importance of improving grid reliability and resilience in the face of natural disasters. We also need to protect it from manmade attacks including cyber attacks. So this year we have requested funding increases to strengthen cybersecurity as well as the Department's cyber defenses. We are also seeking to establish a new Office of Cybersecurity, Energy Security, and Emergency Response which will be led by a new assistant secretary.

Now since many of our nation's greatest energy breakthroughs have come through the work of our national laboratories, we need to ensure their ability to innovate. Meeting the people driving our innovation agenda and imploring them to reach even higher are some of the reasons I am committed to visit each of our national labs. Thus far, I have visited 13 of those 17 labs and also visited other key DOE sites. At each site one thing was made abundantly clear, those who work for the Department are patriots committed to serving the American people.

In the end it will be you, our elected representatives, who will decide how to best allocate the resources of our hardworking taxpayers. My pledge to you is that we will do our best to use those resources wisely and in pursuit of the vital goals that I have just outlined. Thank you and it is my privilege again to be in front of you and attempt to answer your questions.

[The prepared statement of Secretary Perry follows:]

**Testimony of Secretary Rick Perry
U.S. Department of Energy
Before the
U.S. House Energy and Commerce Committee
April 12, 2018**

Chairman Walden, Vice Chairman Barton, Ranking Member Pallone, and Members of the Committee, it is an honor to appear before you today to discuss the President's FY 2019 Budget Request for the Department of Energy ("the Department" or "DOE").

It is a privilege and an honor to serve as the 14th Secretary of Energy.

This budget represents a request to the American people through their representatives in Congress to fund the priorities of this Department.

As such, it represents a commitment from all of us at DOE– that we will honor the trust of our citizens with stewardship, accountability and service.

As Ronald Reagan reminded us in his First Inaugural, "We are a nation that has a government – not the other way around."

When I appeared before this Committee last year, I committed to modernize our nuclear weapons arsenal, protect our energy infrastructure from cyber and other attacks, achieve exascale computing, advance strong domestic energy production, and address obligations regarding nuclear waste management and the Nation's nuclear legacy.

This FY 2019 \$30.6 billion Budget Request for the Department of Energy ("Budget") delivers on these commitments.

The Department's world-leading science and technology enterprise generates the innovations to fulfill our mission. Through our 17 National Laboratories, we engage in cutting-edge research that expands the frontiers of scientific knowledge and generates new technologies to address our greatest challenges.

Our National Laboratories are doing outstanding work in many areas, and they have a rich history of innovation that has bettered the lives of millions across the globe. For example, in FY 2017, the National Laboratories won 33 of the prestigious R&D 100 Awards, including technologies regarding new materials, protecting our environment, incorporating renewable energy reliably on to our electric grid, and sophisticated cybersecurity tools. These are but a few examples of the work the

National Laboratories have done just last year to push the boundaries of research, development, and commercialization. I have had the opportunity to visit many of the Laboratories over the past year, and witness first-hand this outstanding work done by the dedicated workforce across the nation.

I am especially proud of how our National Laboratories, in working with the Department of Veteran's Affairs and other federal agencies, universities, doctors, and researchers, are harnessing the power of our world-class supercomputers to improve the health of our veterans. This work is part of DOE's proud legacy in the biosciences, and as the initiator of the Human Genome Project.

This Budget proposes over \$12 billion in early stage research and development (R&D) that will focus the intellectual prowess of our scientists and engineers on the development of technologies that the ingenuity and capital of America's entrepreneurs and businesses can convert into commercial applications and products to improve the lives and security of all Americans.

Restoring the Nuclear Security Enterprise

The security of the United States and its allies is one of our primary DOE missions.

The Budget fulfills the President's vision of rebuilding and restoring our Nation's security through robust investments in the Department's nuclear security mission. The Budget provides \$15.1 billion for the National Nuclear Security Administration (NNSA), \$2.2 billion or 16.7 percent above the FY 2017 enacted level.

The Request makes necessary investments consistent with the February 2018 Nuclear Posture Review (NPR) to modernize and rebuild a nuclear force and nuclear security enterprise; prevent, counter, and respond to nuclear proliferation and terrorism threats; and provide safe, reliable, and long-term nuclear propulsion to the Nation's Navy.

The Budget includes \$11.0 billion for Weapons Activities. This \$1.8 billion increase over the FY 2017 enacted level supports maintaining the safety, security, and effectiveness of the nuclear stockpile; continuing the nuclear modernization program; and modernizing NNSA's nuclear security infrastructure portfolio in alignment with the NPR.

The Budget includes \$1.9 billion for our ongoing Life Extension Programs (LEP) and Major Alterations, a \$580 million increase. Funding for the W76-1 warhead

LEP supports the Navy and will keep the LEP on schedule and on budget to complete production in FY 2019. An increase of \$178 million for the B61-12 LEP will keep us on schedule to deliver the First Production Unit (FPU) in FY 2020 to consolidate four variants of the B61 gravity bomb and improve the safety and security of the oldest weapon system in our nuclear arsenal.

The Budget also supports the Air Force's Long-Range Stand-Off program through an increase of \$435 million from FY 2017 enacted for the W80-4 LEP, to deliver the first production unit in FY 2025 of the cruise missile warhead. We also increase funding by \$23 million for the W88 Alteration 370 to provide the scheduled first production unit in FY 2020. The request includes \$53 million for a replacement for the W78, one of the oldest warheads in the stockpile, by 2030.

The Budget for Weapons Activities also increases investments to modernize our nuclear infrastructure. For example, we include \$703 million, a \$128 million increase from FY 2017, for construction of the Uranium Processing Facility needed to replace deteriorating facilities at the Y-12 National Security Complex, as well as \$27 million for a Tritium Production Capability at Savannah River and \$19 million for a Lithium Production Capability at Y-12.

The Weapons Activities Budget request also includes \$163 million, a \$68 million increase from FY 2017 enacted, for NNSA collaboration with the Office of Science on the development of exascale computer systems, which I address below.

In the NNSA's Naval Reactors program, the Department has the ongoing responsibility to provide militarily effective nuclear propulsion plants for Navy vessels and to ensure their safe, reliable and long-lived operation. The Budget provides \$1.8 billion to support the safe and reliable operation of the Navy's nuclear-powered fleet and continuation of the *Columbia*-class submarine program, refueling of the Land-Based Prototype reactor, and the Spent Fuel Handling Recapitalization Project.

Today, over 45% of the Navy's major combatants are nuclear powered. DOE's role in propulsion plants, spent fuel handling, and recapitalization is critical to the Navy's ability to conduct its mission around the globe.

The Budget also includes \$1.9 billion for the Defense Nuclear Nonproliferation (DNN) program to reduce global threats from nuclear weapons. This critical national security program prevents the spread of nuclear and radiological materials, advances technologies that detect nuclear and radiological proliferation worldwide,

and eliminates or secures inventories of surplus materials and infrastructure usable for nuclear weapons.

The Budget continues termination activities for the Mixed Oxide Fuel Fabrication Facility project proposed in the FY 2018 Request, providing \$220 million for use toward an orderly and safe closure of the project. The Budget also includes \$59 million for the continuation of preliminary design and the initiation of long-lead procurements for the Surplus Plutonium Disposition project in support of the dilute and dispose strategy.

The Budget provides \$319 million for Nuclear Counterterrorism and Incident Response, \$47 million above FY 2017 enacted, to work domestically and around the world to improve our ability to respond to radiological or nuclear incidents, in conjunction with other agencies in a broader U.S. Government effort.

Finally, the Budget includes \$423 million for the federal workforce at the NNSA. This \$35 million increase is essential to ensuring our world-class workforce of dedicated men and women can effectively oversee NNSA's critical national security missions.

Securing against Cyber Threats

Among the most critical missions at the Department is to develop science and technology that will ensure Americans have a resilient electric grid and energy infrastructure. Protecting this infrastructure means it has to be resilient and secure to defend against the evolving threat of cyber and other attacks.

Unfortunately, cyberattacks pose an ever-increasing threat to the Nation's networks, data, facilities, and infrastructure. A reliable and resilient power grid is critical to U.S. economic competitiveness and leadership, and to the safety and security of the nation. We need to understand the increasing and evolving natural and man-made threats and develop the tools to respond to those threats across our energy infrastructure.

The Department is the sector-specific agency for the energy sector, and therefore, is the lead federal agency for the Emergency Support Function #12 that partners with the energy sector to ensure infrastructure security and resilience and to coordinate response and recovery. To elevate the Department's focus on energy infrastructure protection, the Budget Request splits the Office of Electricity Delivery and Energy Reliability, which totals \$157 million, into two offices. Doing so will increase focus on grid reliability in the Office of Electricity Delivery (OE)

and cybersecurity in the Office of Cybersecurity, Energy Security, and Emergency Response (CESER).

CESER will allow more coordinated preparedness and response to emerging cyber and physical threats and natural disasters and support the Department's national security responsibilities. To work toward this critical objective, the Budget provides \$96 million for the CESER office to develop tools needed to protect the U.S. energy sector against threats and hazards, mitigate the risks and the extent of damage from cyberattacks and other disruptive events, and improve resilience through the development of techniques for more rapid restoration of capabilities.

CESER will work in an integrated manner with private industry, as well as Federal, State, and Local jurisdictions and other DOE offices, to enable industry to enhance the resilience (the ability to withstand and quickly recover from disruptions and maintain critical function) and security (the ability to protect system assets and critical functions from unauthorized and undesirable actors) of the U.S. energy infrastructure.

Also, in FY 2019, the Office of Nuclear Energy's budget includes \$5 million for the Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development (CTD) program to expand its nuclear reactor cybersecurity research to support development of intrusion-resistant systems and practices. Research will be conducted in four areas: cyber risk management, secure architectures, modeling and simulation, and supply chain cyber security assurance. NEET-CTD will also perform simulated cyber-attacks against existing and next generation control system architectures to verify attack difficulty and control efficacy, methods, and metrics.

Securing against cyber threats means we must also protect against threats to the Department's own infrastructure in science, technology, and nuclear security. This Budget takes major steps to safeguard DOE's enterprise-wide assets against cyber threats. The Budget provides funding to secure our own networks, and increases funding for the Chief Information Officer by \$16 million from the FY 2017 enacted level to modernize infrastructure and improve cybersecurity across the DOE IT enterprise. Funding for cybersecurity in the National Nuclear Security Administration is increased to \$185 million to enhance security for our nuclear security enterprise. In the Environmental Management program, we provide \$43 million for cybersecurity to ensure the security at seven cleanup sites. This Budget provides the resources we require to secure our systems and our infrastructure.

Improving Grid Resilience

As we protect our energy infrastructure from cyber threats, we also must improve resilience and reliability of the nation's electricity system. The Budget provides \$61 million for Electricity Delivery to support transmission system resource adequacy and generation diversity, move forward with new architecture approaches for the transmission and distribution system to enhance security and resilience, and advance energy storage. The Budget supports research and development at DOE's National Laboratories to develop technologies that strengthen, transform, and improve energy infrastructure so that consumers have access to reliable and secure sources of energy.

Advancing Exascale and Quantum Computing

As I discussed last year, the Department's leadership in developing and building the world's fastest computers has faced increasingly fierce global competition over the last decade. Maintaining the Nation's global primacy in high-performance computing is more critical than ever for our national security, our continuing role as a science and innovation leader, and our economic prosperity.

The Budget includes \$636 million to accelerate development of an exascale computing system, including \$473 million in the Office of Science (Science) and \$163 million in NNSA. This unprecedented investment, which is \$376 million—or 145 percent—above the FY 2017 enacted level, reflects the Department's plan to deliver an exascale machine for the Office of Science in 2021 and a second machine with a different architecture by 2022.

To achieve these goals, the Science/NNSA partnership will focus on hardware and software technologies needed to produce an exascale system, and the critical DOE applications needed to use such a platform. This world-leading exascale program will bolster our national security by supporting the nuclear stockpile, while also supporting the next generation of scientific breakthroughs not possible with today's computing systems.

We will not, however, satisfy our need for computing advances with the achievement of exascale computing alone. The FY 2019 Budget Request also includes \$105 million in quantum computing to address the emerging urgency of building our competency and competitiveness in the developing area of quantum information science. This early-stage, fundamental research will concentrate on accelerating progress toward application of quantum computing techniques and quantum sensing to grand challenge science questions.

Addressing the Imperative of Nuclear Waste Management

As I mentioned to this Committee last year, we must move ahead in fulfilling the Federal Government's responsibility to dispose of the Nation's nuclear waste. The Budget includes \$120 million, including \$30 million in defense funds, to resume licensing for the nuclear waste repository at Yucca Mountain and implement a robust interim storage program.

The Budget devotes \$110 million for DOE to support the Nuclear Regulatory Commission (NRC) licensing proceeding for the nuclear waste repository at Yucca Mountain, including funding for technical, scientific, legal and other support.

In addition, the Budget includes \$10 million to implement a robust interim storage program to ensure earlier acceptance of spent nuclear fuel and accelerate removal from sites in 39 states across the country. Interim storage capability also adds flexibility to the system that will move materials from sites across the country to its ultimate disposition.

By restarting the long-stalled licensing process for Yucca Mountain and committing to establishing interim storage capability for near-term acceptance of spent nuclear fuel, our Budget demonstrates the Administration's commitment to nuclear waste management and will help accelerate fulfillment of the Federal Government's obligations to address nuclear waste, enhance national security, and reduce future burdens on taxpayers. This also will increase public confidence in the safety and security of nuclear energy, thus helping nuclear energy to remain a significant contributor to the country's energy needs for generations to come.

Fulfilling Legacy Cleanup Responsibilities

The Budget also includes \$6.6 billion for Environmental Management (EM), \$182 million above the FY 2017 enacted level, to address its responsibilities for the cleanup and disposition of excess facilities, radioactive waste, spent nuclear fuel, and other materials resulting from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research.

To date, EM has completed cleanup activities at 91 sites in 30 states and Puerto Rico, and is responsible for cleaning up the remaining 16 sites in 11 states—some of the most challenging sites in the cleanup portfolio.

The Budget continues funding of \$150 million to address specific high-risk contaminated excess facilities at the Y-12 National Security Complex and the

Lawrence Livermore National Laboratory.

The Budget includes \$1.4 billion for the Office of River Protection at the Hanford Site, for continued work at the Hanford Tank Farms and to make progress on the Waste Treatment and Immobilization Plant. This budget will continue progress toward important cleanup required by the Consent Decree and Tri-Party Agreement to include a milestone to complete hot commissioning of the Low Activity Waste Facility by December 31, 2023. The Budget also includes \$747 million to continue cleanup activities at Richland, including continued K-Area decontamination and decommissioning remediation and the K-West Basin sludge removal project. For Savannah River, the Budget provides \$1.7 billion, \$287 million above enacted FY 2017, to support activities at the site. This will include the Liquid Tank Waste Management Program, completing commissioning and beginning operation of the Salt Waste Processing Facility, continued construction of the Saltstone Disposal Unit #7, a start to construction of the Saltstone Disposal Units #8/9, and support for facilities that receive and store nuclear materials.

The Waste Isolation Pilot Plant (WIPP) is essential for the disposition of transuranic defense-generated waste across the DOE complex, and the Budget provides \$403 million to safely continue waste emplacement at WIPP. The Budget Request will continue WIPP operations, including waste emplacements, shipments, and maintaining enhancements and improvements, and progress on critical infrastructure repair/replacement projects, including \$84 million for the Safety Significant Confinement Ventilation System and \$1 million for the Utility Shaft (formerly Exhaust Shaft). These steps will increase airflow in the WIPP underground for simultaneous mining and waste emplacement operations.

The Budget includes \$359 million to continue cleanup projects at the Idaho site, such as the Integrated Waste Treatment Unit, and to process, characterize, and package transuranic waste for disposal at offsite facilities. It provides \$409 million for Oak Ridge to continue deactivation and demolition of remaining facilities at the East Tennessee Technology Park, continue preparation of Building 2026 to support processing of the remaining U-233 material at the Oak Ridge National Laboratory, and support construction activities for the Outfall 200 Mercury Treatment Facility at the Y-12 National Security Complex.

For Portsmouth, the Budget includes \$415 million, \$33 million above FY 2017 enacted, to continue progress on the deactivation and decommissioning project at the Portsmouth Gaseous Diffusion Plant, safe operation of the Depleted Uranium Hexafluoride Conversion Facility, and construction activities at the On-Site Waste Disposal facility. At Paducah, the Budget includes \$270 million to continue

ongoing environmental cleanup and depleted uranium hexafluoride (DUF6) conversion facility operations at the Paducah site. In addition, the FY 2019 Budget Request supports activities to continue the environmental remediation and further stabilize the gaseous diffusion plant.

Together, these investments for Environmental Management will make significant progress in fulfilling our cleanup responsibilities while also starting to address our high-risk excess facilities at NNSA sites.

Focusing Priorities on Core Missions

The Budget continues to focus the Department's energy and science programs on early-stage research and development at our National Laboratories to advance American primacy in scientific and energy research in an efficient and cost-effective manner.

Also, in line with Administration priorities, the Budget terminates the Advanced Research Projects Agency-Energy, known as ARPA-E, and the Department's Loan Programs, while maintaining necessary federal staff to oversee existing awards and loans. Termination of these programs will save over \$300 million in FY 2019 alone while significantly reducing financial risk to the taxpayer moving forward.

Advancing American Energy Dominance

The Budget requests \$2.1 billion for the applied energy programs. Within these offices, the FY 2019 Budget focuses resources on early-stage, cutting-edge R&D conducted by the scientists and engineers at our 17 National Laboratories who continually develop the next great innovations that can transform society and foster American economic competitiveness and then on transitioning these breakthroughs to the private marketplace.

The Budget consolidates programs focused on bringing technologies to the market in the Office of Technology Transitions, requesting a 23% increase from FY 2017. Through concerted effort and coordination with our labs, this will reduce costs to the taxpayer while at the same time providing a robust technology transfer program to transfer breakthroughs from the National Laboratories to the private sector.

Nuclear Energy

Nuclear energy provides 20 percent of our electricity baseload, and 60 percent of our carbon-free generated electricity. The Budget provides \$757 million for the

Office of Nuclear Energy to continue innovating new and improved nuclear energy technologies. The budget focuses funding on early-stage research and development, such as the Nuclear Energy Enabling Technologies program, that enables the research and development of innovative and crosscutting nuclear energy technologies to resolve fundamental nuclear technology challenges.

The FY 2019 Budget includes \$163 million for the Reactor Concepts Research, Development and Demonstration program. Within this total, \$128 million is for early-stage R&D on advanced reactor technologies, including \$54 million for a new Advanced Small Modular Reactor R&D subprogram. This new subprogram is a one-time effort to fund cost-shared early-stage design-related technical assistance and R&D, the results of which are intended to be widely applicable and employed by nuclear technology development vendors for the purpose of accelerating the development of their advanced SMR designs. The Budget also provides \$15 million within Reactor Concepts for early-stage R&D and pre-conceptual design work related to Versatile Advanced Fast Test Reactor concept.

Within the Fuel Cycle Research and Development program, the Budget provides \$40 million to support the development of one or more light water reactor fuel concepts with significantly enhanced accident tolerance.

Finally, the Budget for Nuclear Energy also supports robust safeguards and security funding of \$136 million—a \$7 million increase—for protection of our nuclear energy infrastructure and robust infrastructure investments at INL facilities.

Fossil Energy Research and Development

The Fossil Energy Research and Development (FER&D) program advances transformative science and innovative technologies which enable the reliable, efficient, affordable, and environmentally sound use of fossil fuels. Fossil energy sources currently constitute over 81 percent of the country's total energy use and are critical for the nation's security, economic prosperity, and growth. The FY 2019 Budget focuses \$502 million on cutting-edge fossil energy research and development to secure energy dominance, further our energy security, advance strong domestic energy production, and support America's coal industry through innovative clean coal technologies.

FER&D will support early-stage research in advanced technologies, such as materials, sensors, and processes, to expand the knowledge base upon which industry can improve

the efficiency, flexibility, and resilience of the existing fleet of coal fired power plants. The request also focuses funding on early-stage research that enables the next generation of high efficiency and low emission coal fired power plants that can directly compete with other sources of electricity in the market and provide low cost reliable power 24/7.

Funding is also provided to support competitive awards with industry, National Laboratories and academia focused on innovative early-stage R&D to improve the reliability, availability, efficiency, and environmental performance of advanced fossil-based power systems. For example, the Advanced Energy Systems subprogram will focus on the following six activities: 1) Advanced Combustion/Gasification Systems, 2) Advanced Turbines, 3) Solid Oxide Fuel Cells, 4) Advanced Sensors and Controls, 5) Power Generation Efficiency, and 6) Advanced Energy Materials. While the primary focus is on coal-based power systems, improvements to these technologies will result in spillover benefits that can reduce the cost of converting other carbon-based fuels, such as natural gas, biomass, or petroleum coke into power and other useful products in an environmentally-sound manner.

Energy Efficiency and Renewable Energy

The Energy Efficiency and Renewable Energy budget funds \$696 million to maintain America's leadership in transformative science and emerging energy technologies in sustainable transportation, renewable power, and energy efficiency. Knowledge generated by early-stage R&D enables U.S. industries, businesses and entrepreneurs to develop and deploy innovative energy technologies and gives them the competitive edge needed to excel in the rapidly changing global energy economy.

Energy storage is an important area of focus, and the Request includes \$36 million for battery R&D as well as \$90 million for a new "Beyond Batteries" R&D initiative. As part of grid modernization efforts, "Beyond Batteries" considers energy storage holistically, and focuses on advances in controllable loads, hybrid systems, and new approaches to energy storage, which are essential to increasing the reliability and resiliency of our energy systems.

Advances in these areas, as well as in battery technologies, will allow for loads to be combined with generation from all sources to optimize use of existing assets to provide grid services, and increase grid reliability. The FY 2019 also invests in advanced combustion engines, and new science and technology for developing biofuels. The Budget funds research into the underpinnings of future generations of solar photovoltaic technology, into the design and manufacturing of low-specific

power rotors for tall wind applications, and on wind energy grid integration and infrastructure challenges.

The Budget also funds early-stage R&D for advanced manufacturing processes and materials technologies. These efforts, combined with the research that leverages the unique high-performance computing assets in the National Laboratories, can drive the breakthroughs that will promote economic growth and manufacturing jobs in the United States.

Leading World-Class Scientific Research

The Department of Energy is the Nation's largest Federal supporter of basic research in the physical sciences, and the President's FY 2019 Budget provides \$5.4 billion for the Office of Science to continue and strengthen American leadership in scientific inquiry. By focusing funding on early-stage research, this Budget will ensure that the Department's National Laboratories continue to be the backbone of American science leadership by supporting cutting-edge basic research, and by building and operating the world's most advanced scientific user facilities—which will be used by over 22,000 researchers in FY 2019.

We provide \$899 million for Advanced Scientific Computing Research, an increase of \$252 million above the FY 2017 enacted level. This funding will continue supporting our world-class high-performance computers that make possible cutting-edge basic research, while devoting \$472 million in the Office of Science to reflect the Department's plan to achieve exascale computing by 2021. This focused effort will drive the innovations necessary for computing at exascale speeds, resulting in computing systems at unprecedented speeds at Argonne National Laboratory in 2021 and Oak Ridge National Laboratory in 2022. The FY 2019 Request also supports quantum computing R&D and core research in applied mathematics and computer science, and high-performance computer simulation and modeling.

The Budget also provides \$1.8 billion for Basic Energy Sciences, supporting core research activities in ultrafast chemistry and materials science and the Energy Frontier Research Centers. We will continue construction of the Linac Coherence Light Source-II at SLAC National Accelerator Laboratory and the Advanced Photon Source Upgrade at the Argonne National Laboratory, and initiate the Advanced Light Source Upgrade project at the Lawrence Berkeley National Laboratory, and the Linac Coherence Light Source-II High Energy project at SLAC. The operations of the light sources across the DOE science complex and supporting research across the

Nation will ensure our continued world leadership in light sources and the science they make possible.

The Budget also provides \$770 million for High Energy Physics, including \$113 million for construction of the Long Baseline Neutrino Facility and Deep Underground Neutrino Experiment at Fermilab, \$63 million above the enacted FY 2017 level. We will continue to fund ongoing major items of equipment projects, and initiate three new projects at the Large Hadron Collider, the High Luminosity Large Hadron Collider Accelerator Project, and the High Luminosity ATLAS and CMS detector upgrade projects. By supporting the highest priority activities and projects identified by the U.S. high energy physics community, this program will continue cutting-edge pursuit to understand how the universe works at its most fundamental level.

The Budget for the Office of Science provides \$340 million for Fusion Energy Sciences, including \$265 million for domestic research and fusion facilities and \$75 million for the ITER project. For Nuclear Physics, the budget provides \$600 million to discover, explore, and understand nuclear matter, including \$75 million for continued construction of the Facility for Rare Isotope Beams and operations of facilities, including the newly-upgraded Continuous Electron Beam Accelerator Facility. For Biological and Environmental Research, the Budget includes \$500 million to support foundational genomic sciences, including the Bioenergy Research Centers and to focus on increasing the sensitivity and reducing the uncertainty of earth and environmental systems predictions.

Strategic Petroleum Reserve

In addition to our nuclear security responsibilities, the Department of Energy ensures the Nation's energy security. The Strategic Petroleum Reserve (SPR), one component of that effort, protects the U.S. economy from disruptions in critical petroleum supplies and meets the U.S. obligations under the International Energy Program. The Budget includes \$175.1 million, \$47.5 million below the FY 2017 enacted level, to support the Reserve's operational readiness and drawdown capabilities. The Request also includes a drawdown and sale of up to 1 million barrels of crude oil from the SPR to provide funding for Congressionally-mandated crude oil sales and emergency drawdown operations.

The Budget continues the sale of SPR oil for the Energy Security and Infrastructure Modernization Fund authorized by the Bipartisan Budget Act of 2015 to support an effective modernization program for the SPR.

Finally, as the Northeast Gasoline Supply Reserve (NGSR) is operationally ineffective and not cost-efficient as a regional product reserve, the President's Budget proposes to liquidate the NGSR and sell its one million barrels of refined petroleum product in FY 2019, resulting in an estimated \$77 million in receipts.

Power Marketing Administrations

Finally, the Budget includes \$77 million for the Power Marketing Administrations (PMAs). The Budget proposes the sale of the transmission assets of the Western Area Power Administration (WAPA), the Bonneville Power Administration (BPA), and the Southwestern Power Administration (SWPA) and to reform the laws governing how the PMAs establish power rates to require the consideration of market based incentives, including whether rates are just and reasonable. The Budget also proposes to repeal the \$3.25 billion borrowing authority for WAPA authorized by the American Recovery and Reinvestment Act of 2009.

Conclusion

In conclusion, I reaffirm my commitment to ensure that the Department of Energy, along with its national laboratories, will continue to support the world's best enterprise of scientists and engineers who create innovations to drive American prosperity, security and competitiveness. The President's FY 2019 Budget Request for the Department of Energy positions us to take up that challenge and delivers on the high-priority investments I proposed to you last year.

As we move forward over the coming weeks and months, I look forward to working with you and your colleagues in Congress on the specific programs mentioned in this testimony and throughout the Department. Congress has an important role in the path forward on spending decisions for the taxpayer, and I will, in turn, ensure DOE is run efficiently, effectively, and we accomplish our mission driven goals. Thank you, and I look forward to answering your questions.

Mr. UPTON. Well, thank you, Mr. Secretary. At this point we will move to questions from both sides. We appreciate again your presence here.

I want to first ask, going back to what Chairman Walden said, the great State of Michigan, one of the reasons why it is such a great state is because of the Great Lakes. And I would like to talk to you briefly about the Straits of Mackinac which you know that we both deeply care about. About a week and a half ago, we learned that two high voltage transmission cables that run under the straits near the Mackinac Bridge were destroyed by a ship's anchor and was taken out of service. Enbridge's Line 5 which carries not only crude oil, light crude, and also propane, also runs under the straits only a short distance away, was also struck by that same anchor and the pipeline was damaged. It was a near miss. It could have been catastrophic for sure.

And even though the strike on Line 5 did not cause an oil spill, that is something we all worry about. Earlier, Governor Snyder and I reached an agreement with Enbridge who maintains that line to look at a number of options to replace that line. In my view, it needs to be directionally drilled in terms of a new line that needs to replace the existing line. I know that they are looking at a number of different options, and particularly with the events of the last 2 weeks it prompts us to try and expedite that process even faster.

A couple questions I have as I work with the governor's office and others, can you help us in looking at a replacement for this line as it relates to the permitting that would be required and other efforts within the administration to replace that Line 5 with a safer option than we have today?

Secretary PERRY. Yes. Well, the short answer is yes. But if I could just expand a moment, I think it is really important for us to recognize that our infrastructure not only in some cases as this one, I would suggest, is aging, but also the expansion of that infrastructure to be able to take advantage of this new energy resource, if you will. Twelve years ago there was a fellow traveling around the country making a pretty good living giving a speech about peak oil, and the world has so changed and America is in such a different position and being able to move those resources safely and efficiently is really important to the economy and to the national security of this country.

Mr. UPTON. Well, you might remember that there was an Enbridge pipeline break a number of years ago and when that happened we actually passed the Upton-Dingell bill and it passed with maybe one vote against it in the Congress. We upgraded all of the safety standards and fines for new pipelines, and one of the provisions in that bill in fact was that any new pipeline built that goes underneath a body, a significant body of water, major river, et cetera, certainly the Straits of Mackinac, would have to be buried underneath that lake or riverbed and not be trenched or simply laid on the top.

So what I have been pushing Enbridge to do, and I know the governor is on board as well, is to actually go underneath and use that technology that is available today so that we can get this thing replaced. One other question relating to that, can you ask your department of energy and reliability to actually study what would

happen if this line went out for some type of duration? It leads to a major refinery over in Detroit and then that oil is refined and wholesaled throughout the Midwest. And I would like to know what the impact might be particularly on the consumers, and if you could help us get that, that would be good.

Secretary PERRY. I would be happy to do that, Mr. Chairman. Your common, or let me put it this way, I think our common sense, collectively, tells us that if we lose a major line to a refinery like that, that it is going to have a negative impact not only on the consuming public, but also I will suggest, and it is one of the things I think you are very wise to ask us to take a look at this, on the national security side of it.

I don't know where that fuel goes in its final stages, but you all have major military bases in that part of the country and it could have a negative impact on their ability to have fuel available for the security of this nation.

Mr. UPTON. The last question I have is while we are talking about pipeline safety I want to turn to the recent news regarding cyber attacks on pipelines and as you know that there was a published report just in the last week or two as to a cyber attack on one of our pipelines here. I know that that is almost a daily occurrence.

Why is it so important that DOE take a strong role in coordinating the federal response? You may know that I have a bill, H.R. 5175, the Pipeline and LNG Facility Cybersecurity Preparedness Act, which would enhance DOE's ability to coordinate pipeline security and emergency response. Can you work with us as we move that bill forward?

Secretary PERRY. Yes, sir. Obviously, the world has really changed from the standpoint of, and it is not just a few times. It is thousands of times a day that there are bad actors out there whether they are nation states or whether they are just a single individual with ill intent in mind that are trying to penetrate into systems all across this country, some of them that could have catastrophic impact on our ability to deliver energy.

It is the reason that we have asked for these additional funds to stand up this office that we refer to as CESER or Cybersecurity. I want to thank Joe Barton for the work that he has done on reorg to help us from the standpoint of modernizing the agency to look at the changes that have just happened, let's say, in the last decade in this country relative to the new energy resources we have available, the infrastructure that we are going to need, and the security and resiliency of that infrastructure, obviously including the grid that is out there.

Mr. UPTON. Thank you much. I would yield to the ranking member, Mr. Rush.

Mr. RUSH. Well, thank you, Mr. Chairman. Mr. Secretary, again I want to thank you for agreeing to meet with me in the near future to discuss ways that we can ensure that the Department of Energy reflects the nation's diversity not only within the mid-level staff levels, but also within the highest levels of the decision making process and positions. With your help, Mr. Secretary, I want to ensure that we have diverse perspectives structurally in the most critical areas, and these areas include within your office, the Insti-

tutional Review Board, the Energy Advisory Board, the Senior Executive Service, now, and of course at the highest levels of the national labs.

That said, Mr. Secretary, what is the justification for cutting the Office of Energy Efficiency and Renewable Energy by 70 percent from fiscal year 2018 levels? As you know, energy efficiency is one of the few issue items that enjoys widespread bipartisan support here in the Congress. Initiatives like the Weatherization Assistance Program are extremely popular not only with policymakers here, but really all across the country as it helps to conserve energy while also lowering utility bills for low-income families. Why is the administration proposing to cut or completely eliminate these critical programs?

Secretary PERRY. Mr. Chairman, Ranking Member, thank you. Let me address, you asked two questions. On the focus on minorities and minorities at the DOE, I think we are focused on that. Twenty seven percent of our entire enterprise is made up by minorities. I think it is really important to bring to the committee's attention that we also have a focus on small business contracting at the laboratories so that women-owned and minority-owned businesses have the expertise to be able to make their way through the myriad contracting issues that are there.

One of the other things I am really proud of is that we have a program at the DOE to promote diversity in the STEM area back in both high schools and colleges to be able to get young diverse members of our society pointed in the right direction, engineering, math, science, technology, those, and I am really proud of what DOE is doing in that line. And I want to come and sit down with you in your office and talk more about this and the ways that we can do better.

Let me shift over to the EERE and to your concerns. And I heard Mr. Pallone's concerns as well dealing with EERE and the reductions there and I want to try to explain them in this way and then have one comment at the end of that. One of the things that we have seen is that as technology has become more mature, for instance, both solar and wind, and I try to remind folks that while I was the Governor of Texas we produced more wind energy than any other state in the Nation, passed up every state in the country and produced more wind energy than five countries and I am committed to having that diverse portfolio, but those are now becoming mature in the sense of their market, marketability and going to the market and being commercialized.

So the dollars that have historically been spent to bring those up to the place where they can be mature, we don't feel like those dollars need to be expended now. Are there other areas that we need to be focused on and yes, grid integration is a great example of it, energy storage, kind of beyond batteries, if you will. Another DOE area that we are focusing on is in hydrogen R&D. Those are early stage and that is where you are going to see us focused with the dollars.

So, we will always have a give-and-take back-and-forth about are you spending enough here, are you spending enough there, and I respect that. As a former appropriator, as a former agency head, and then as a CEO as the governor, I really respect the author-

izers, the appropriators, and the administrative or the executive side of this. I know what my job is, and my job is to work with you, which I will do on a daily basis to find that appropriate ground. But I will promise you this that where you appropriate and where you authorize we will work to make you very proud that we manage it absolutely the most efficient way that it can be.

Mr. RUSH. I yield back, Mr. Chair.

Mr. UPTON. The chair would recognize the gentleman from Oregon, a good state, Mr. Walden.

Mr. WALDEN. We are a good state now, thanks. Thank you, Mr. Chairman. And, Mr. Secretary, again thank you for being here. Before I say anything we should also draw attention to the fact it is Mr. Walberg's birthday today so happy birthday—from Michigan, the great State of Michigan.

Mr. Secretary, I want to start by talking about Bonneville Power Administration. I appreciate your most recent comments about respecting the will of the authorizers, which is what we are. So along those lines, this idea of selling off the electric transmission assets and abandoning cost-based rates proposal has been roundly rejected by virtually every member of the Pacific Northwest congressional delegation. It is the one idea—bad idea—that unites all of us in the Northwest. I am afraid this move could do nothing but harm my constituents, drive up electricity costs, hurt consumers across the region; so can you assure me the DOE will leave Bonneville alone unless Congress provides explicit authorization—that authorization word again there, Mr. Secretary.

Secretary PERRY. Yes, sir.

Mr. WALDEN. Thank you. Now moving along, as you know the Hanford Site is just across the river from many of my constituents. And not only are safe and secure operations a concern, and I appreciate your commitment not only to that and the lab nearby but also the help to do the cleanup here, the Committee right now is working with the GAO to identify some options for improving operational performance. Will you work with us on this as we develop findings?

Secretary PERRY. Yes, sir.

Mr. WALDEN. Thank you. Let me ask a broader question. As we look at modernizing the Department we are focusing on emergency and security issues, but also how the Department can better expend its limited resources. We are also cognizant of the Department's vast technological capabilities which can help accelerate innovation across national security, energy, manufacturing, even medicine as you have referenced in your testimony, but we also have to watch our taxpayers' wallets. Can you speak to your support of DOE's science, technology, computing facilities and how best to enable innovation in the private sector while tentatively managing limited taxpayer resources?

How are you going to balance all that because your labs are doing amazing work. It is phenomenal. And for our committee members, if you haven't interacted with these labs we should figure out a way to do that and get some briefings. It is really terrific, the work that is being done there. So, Mr. Secretary, what can you tell us about how to balance all that and where you are headed in terms of the direction of the labs and, yes.

Secretary PERRY. Technology transfer is, I think, one of the real goals of this agency from the standpoint of working with the labs and we are consolidating the EERE's tech-to-market functions over in the Office of Technology Transfer. And just as a bit of a background I have a fairly substantial amount of experience with that. We created some programs while I was the Governor of Texas, the Emerging Technology Fund which basically is taking a very, very early stage technology and getting it to the market.

So I have had some experience of dealing with that as the Governor of Texas which, I am not going to say this is apples-to-apples, but the point is we have in place the Office of Technology Transfer and it is looking at how to coordinate best practices across the complex and to, whether it is agreement provisions and abilities to consider equities and licensing, there is a host of areas.

And I don't want to drill down all that deep, but the point is we are sensitive to one of our goals in a limited budget situation is to be able to help these technologies get to maturation, if you will, or at least to the point where they are ready to be commercialized in the private sector.

Mr. WALDEN. All right, good. And in conclusion for my few minutes here, this work on reorganizing and modernizing the structure of your agency is something that I take seriously. It is a goal for our committee and I know Mr. Barton is leading that effort and working with Mr. Rush and others to get that done.

So we take it seriously here, we want you to know that. We look forward to a partnership to look at how to reauthorize and modernize the agency. Our committee has a pretty good track record looking at other agencies, and like the FCC we reauthorized for the first time since 1990, your agency is one that goes back before that. And so we look forward to continuing to work with you on that effort and so we want to move forward.

I will thank the chairman for this hearing and return the balance of my time.

Mr. UPTON. The gentleman yields back. The chair recognizes the gentleman from New Jersey, Mr. Pallone.

Mr. PALLONE. Thank you, Mr. Chairman. Mr. Secretary, how many LNG export applications to Non-Free Trade Agreement countries are currently pending before the DOE, if you will?

Secretary PERRY. There is 19, correct? I think there is 19.

Mr. PALLONE. Do you believe that—

Secretary PERRY. Let me, I will get you the—

Mr. PALLONE. Yes. I will accept that. And if you want to get back to me if you think it is slightly wrong, please do. Do you believe that the DOE should continue to have a role in approving the LNG export applications, yes or no?

Secretary PERRY. Yes, sir.

Mr. PALLONE. And does the EPA, now I am talking about the EPA, does the EPA play any role in DOE's public interest determination process, yes or no?

Secretary PERRY. I am sure they do, but I am no expert on how the EPA functions, sir.

Mr. PALLONE. OK. Well, whether or not you agree that the U.S. Government should be promoting exports of American LNG that is an activity that would clearly fall within the mission of your De-

partment or maybe the Department of Commerce. But as you know, I think late last year EPA Administrator Scott Pruitt traveled to Morocco to pitch that country on buying LNG from the U.S. Obviously I am very concerned that that doesn't fall within the EPA's mission. Do you think that this falls within EPA's mission?

Secretary PERRY. Mr. Pallone, I am going to leave that up to you. I try to stay in my lane as best I can. So again as I shared with you, I don't know what EPA's statutory responsibility and authorizations are relative to promoting energy sales and/or what else might have been going on that I don't know about on that trip. So I think it would be a little inappropriate for me to be making a public or private observation about that.

Mr. PALLONE. All right. Well, let me just ask. I think I know your answer, but did you or your Department have any role in Mr. Pruitt's Morocco trip?

Secretary PERRY. Again there may have been some staff-to-staff level conversations that I am not privy to, but from the standpoint of Secretary-to-Secretary I don't recall any conversations relative to an EPA trip to Morocco.

Mr. PALLONE. All right, thank you. I just wanted to point out that when Administrator Pruitt testified before this committee late last year he used the phrase "core mission" many times and argued that he was working to take EPA back to focusing on its basic responsibilities. And I found it strange that Administrator Pruitt thinks that visiting foreign countries to promote the sale of fossil fuels from private companies falls within the EPA's core mission. I don't think it does.

But let me ask you a second question, Mr. Secretary. I note that the Department has established a web page and email address to accept public comments and requests regarding emergency must-run orders under the Federal Power Act, section 202(c). And I am supportive of efforts to expand public participation in government processes, however, I don't see anything on that web page that indicates that these comments, whether as-is or redacted, will be posted for the public to see.

If you want me to repeat this I will, but I am basically trying to get a commitment from you to posting the comments you receive on your website or at the very least providing this committee in real time the comments you received on this matter for all of us here to review. Is that something you can commit to?

Secretary PERRY. Yes, sir. And I think we have a place for public comments because this 202(c) is just now being analyzed and I don't think we even have a process in place yet for the public—

Mr. PALLONE. You do have on the website a page and email address to accept public comments and requests regarding the Federal Power Act section 202, but I just want to make sure that they will be posted for the public to see. That is what I am asking.

Secretary PERRY. Yes, sir. We will.

Mr. PALLONE. All right, thank you so much. I yield back.

Mr. UPTON. The chair recognizes the vice chair of the Energy Subcommittee, the gentleman from Texas, the good State of Texas. Oh, Mr. Barton, I am sorry. Mr. Barton, I recognize Mr. Barton, the vice chair of the full committee.

Mr. BARTON. All right. Well, you sometimes are too many Texans, right?

Mr. UPTON. Mr. Barton, whose picture is right above you on the right, is recognized for 5 minutes.

Mr. BARTON. As Mr. Upton's is right up there.

First of all, welcome, Mr. Secretary.

Secretary PERRY. Yes, sir.

Mr. BARTON. I think you and I should acknowledge at the beginning that our basketball team got hammered by Mr. Upton's team in the Sweet 16.

Mr. UPTON. One point.

Mr. BARTON. One, we got beat 27 points. My lord, they put it to us. So I know I can't speak for Secretary Perry, but I wasn't real happy that afternoon.

Mr. UPTON. Thinking about Houston that was the three-pointer there.

Mr. BARTON. Yes, the game before you barely won, you put the wood to us. Anyway, we are glad to have you, Mr. Secretary.

Secretary PERRY. Yes, sir.

Mr. BARTON. I am tempted to go down the rabbit hole that Mr. Pallone introduced about your colleague at the EPA, but I don't think so. I will say on my own behalf that any Cabinet Secretary that encourages things that are of strategic interest to the United States of America in his overseas travels is not necessarily a bad thing. And I am glad to learn that Mr. Pallone agrees that there are limits to what EPA should be involved with. So in that sense it was a good exchange.

I want to ask a few budget questions, but I am going to ask one policy question. You probably can't read this. This is today's business section of the Wall Street Journal. It says oil hits highest price since 2014. I am sure you read that before you came up here. And inside it has another article about Treasury bonds are beginning to inch up and tension in the marketplace over that.

What, if anything, should the Department of Energy under your stewardship do with the Strategic Petroleum Reserve to try to, I am not going to say manage the market, but make sure oil prices don't go too high in the near term, if anything?

Secretary PERRY. Well, Mr. Chairman, I think one of the things that DOE needs to do and can do from the standpoint of making sure that there is a ready supply of energy, whether it is renewables, whether it is hydro, whether it is nuclear, whether it is coal, whether it is natural gas, the Strategic Petroleum Reserve, I think you bring up a really interesting opportunity for this body and for Congress and the administration to have, and obviously the public to have an open conversation about is the SPRO the way that it is structured today the proper structure? Is there enough, too much? Is the operation of it on a yearly basis, the cost of the upkeep of that in our best interest?

I will leave that to all of us, collectively, to have that conversation. But it was put in place after World War II and there may be, and after the shortage of the '70s when we saw the need for that really exploding, if you will. And I think the question now is that with the resources that the United States has with the new innovation, with the new energy portfolio that we have, does the Strategic

Petroleum Reserve need to stay in its current form? I am not ready to sit here and tell you I know the answer to that, but I think it is important the issue that you brought up that we need to have that conversation.

Mr. BARTON. The GAO has done a study of the Strategic Petroleum Reserve and it basically says we need to do more study. You and I are going to meet next week and I think we are also going to have the staff begin to meet also with our friends on the minority side and that will be something that we bring up.

I have a few quick just dollar questions since this is—

Secretary PERRY. I will try to give you yes or no answers, sir.

Mr. BARTON. Yes. Do you support us funding Yucca Mountain, us, the government, funding Yucca Mountain? I hope you say yes.

Secretary PERRY. The dollars that you all are going to appropriate we will spend efficiently and appropriately, yes.

Mr. BARTON. OK, finally. We have a Northeast Home Heating Oil Reserve that I put into a bill with Congressman Markey back in, oh, about 10 years ago. We spend \$10 million a year on it. It has never been used. Is that maybe something we could save a little money on?

Secretary PERRY. Well, certainly, when you have dollars sitting in an account that is not being used it is—

Mr. BARTON. Something to look at.

Secretary PERRY. Yes.

Mr. BARTON. OK. And you have \$159 million in your budget for something called Legacy Management. Do you happen to know what that is?

Secretary PERRY. Yes, sir. Those are areas that older facilities that, on the cleanup side that is over in EM.

Mr. BARTON. I am very proud that you knew what it was.

Secretary PERRY. Yes, sir. The Cold War cost a lot of money as did the Manhattan Project. Still costing us a lot of money but it was worth it, sir.

Mr. BARTON. Let's see if we can save some money there.

Thank you, Mr. Chairman. And thank you, Mr. Secretary.

Mr. UPTON. The gentleman's time is expired.

The gentleman from California, Mr. McNerney.

Mr. MCNERNEY. I thank the chairman.

Mr. Secretary, I really appreciate your interest in veterans issues and particularly using science and computing power to make advances in PTSD and traumatic brain injuries and other veteran-centric issues and I look forward to any collaboration—

Secretary PERRY. Yes, sir.

Mr. MCNERNEY [continuing]. Between us in the future. There is two issues I want to bring up today. One is resiliency of the electric grid, especially in the face of the wildfires we had in California, and other threats that we are seeing and ARPA-E funding. Regarding resilience, does the DOE have any tools to help ensure resilience despite some of the gaps we have in our current law? Are there any tools that we can use that you can use to help us make our grid more resilient to these things in California and elsewhere?

Secretary PERRY. Obviously the test grid, if you will, at Idaho National Lab is one of the resources that we have available where

we can literally go in and break that grid and to see what happens and how to address it.

Mr. MCNERNEY. Well, what I am really thinking about is Federal tools to work between the DOI and the Forest Service to ensure rights of way so that brush can be cleared in Federal lands, those kind of things.

Secretary PERRY. I am sorry. I was going down a different path here.

Mr. MCNERNEY. Sure.

Secretary PERRY. Let me get back to you. I don't off the top of my head know that we have any resources available for that specific—

Mr. MCNERNEY. Or authorities.

Secretary PERRY. Or authority, yes, sir.

Mr. MCNERNEY. Thank you.

Secretary PERRY. But I will get back to you.

Mr. MCNERNEY. Well, the current budget proposal reduces funding for resilience and reliability from \$89 billion in 2017 to \$61 billion in 2019. And we have seen an increase in some of these threats, wildfires, hurricanes, storms and so on, so that budget direction seems to be going the wrong way. I think we need increase in that so that is a point of recommendations.

Secretary PERRY. Yes, sir. Mr. McNerney, I don't want to quibble with you about the issue of is it a reduction of dollars or, one of the things that we have done, I believe, in that particular line item is that we bifurcated it. And that is where cybersecurity, and we split that historic line item up and are creating this new office of cybersecurity emergency response and that has an 8.3 percent, yes sir, I think that is right. It has a substantial increase over on that side and you may be seeing the EERE budget that is lower.

But the commitment to resiliency and to reliability from my perspective has actually increased. And so let me come over and sit down with you and we can look at this a little closer to make sure that—I know what you want to do and I want to get to the same place that you are. I think the membership wants to get from the standpoint of making sure that we have the resiliency, the reliability in our grid.

Mr. MCNERNEY. And of course then that applies to the whole country not just to California.

Secretary PERRY. Yes, sir.

Mr. MCNERNEY. Regarding ARPA-E, this program is designed to help keep the United States at the forefront of energy innovation. Energy innovation, I think that is a key element in ensuring our strong market position on energy issues. How determined is the administration in eliminating this program?

Secretary PERRY. It shows up on the budget. I am a good enough historian to understand that we are going to do what the Congress wants to do on this. As a former CEO of the State of Texas I put some budgets forward from time to time that actually had zero line items in them. And—

Mr. MCNERNEY. That is kind of the same answer you gave 6 months ago so.

Secretary PERRY. Yes, sir. And that was not particularly well received by the appropriators.

Mr. MCNERNEY. OK. Mr. Secretary, do you support robust funding for fusion energy research and development?

Secretary PERRY. Yes, sir.

Mr. MCNERNEY. Thank you. Your predecessor was deeply involved in the negotiations for the Iran nuclear agreement. This administration has considered scrapping that agreement. Are you involved in those deliberations?

Secretary PERRY. Well, being on the National Security Council, yes, sir, to some degree. I would not put myself as the lead negotiator, but certainly am involved with the conversations generally in rooms that we can't be having conversations with here.

Mr. MCNERNEY. Can you disclose your opinion on that?

Secretary PERRY. Well, I think like any of our deals whether it is NAFTA, whether it is JCPOA, whether it is the negotiations that are ongoing with Saudi Arabia for a civil nuclear agreement, we need to get the best agreement that we can get. I think one of our main responsibilities is to, in the nonproliferation area is to make sure that the fewer individuals who have access to those types of materials that can be made into weapons we need to restrict that so.

Mr. MCNERNEY. The agreement is already in place.

Secretary PERRY. I understand that, but so is NAFTA and we are renegotiating NAFTA. So I think the administration's point is can we re-engage and get a better deal. I don't have a problem in the world with that no matter what it might be, whether it is NAFTA, whether it is JCPOA. We have people renegotiating LNG deals that they signed 3 years ago.

Mr. MCNERNEY. I think the chairman is going to cut us off here so thank you.

Secretary PERRY. I know. Yes, sir. Thank you.

Mr. MCNERNEY. Thank you, Mr. Secretary.

Mr. UPTON. The chair recognizes now the vice chair of the powerful Energy Subcommittee, Mr. Olson, from the great State of Texas.

Mr. OLSON. I thank the chair.

And, Secretary Perry, a big old Texas howdy.

Secretary PERRY. Howdy.

Mr. OLSON. It is great to have you back before the panel. As a personal note, I am glad you did not leave DOE for VA as was rumored. Houston Texans are happy to have your hat hang where it is hanging today.

Secretary PERRY. Yes, sir.

Mr. OLSON. I want to talk about section 202(c) of the Federal Power Act. I was one of the members of last Congress to lead an effort to amend section 202(c). That change was signed into law. The intent was limited. Talking about "continuance of war" or a "sudden increase in demand for electric energy, or a shortage of electric energy," there have been proposals to help failing coal and nuclear plants through section 202(c). I support coal and nuclear power and I believe we have to have a diverse grid. Hurricane Harvey showed that dramatically.

In my district, as you know, NRG's Parish power plant has four coal generators and four natural gas generators. Fifty inches of rain or more wiped out that coal, made it wet. They ramped up natural gas production at that facility. Forty miles south is the

South Texas Nuclear power plant in Bay City. That never had a flicker despite having the brunt of Harvey's force. Could you please talk about your view of section 202(c) and the powers it gives you?

Secretary PERRY. Yes, sir. And if I may, I would like to go back and just if I could very quickly clarify a conversation with Mr. Pallone where we talked about the email address on the 202(c) comments. And we have an address that is on our website that is the destination for correspondence for this and future applications. So it is not a formal comment period because there has been no formal comment opened up so I just wanted to clarify that.

The 202(c) is in place and I think you did a very good job, Mr. Olson, of basically laying out why a 202(c) could be used in this case. When we look at national security in particular, if you are in New York City and Wall Street were to lose power, I think anyone would say that puts our national security in jeopardy. We have military bases in a lot of different places around the country that rely upon their energy from the grid. Losing power to that grid would put our national security at risk.

So this administration looks at the national grid and the resiliency of it as well as the reliability of it as a national security issue. Having a very broad portfolio of renewables, of natural gas, of coal, of nuclear, of hydro, those are, we think, instrumental in being able to send the message across this country that whether it is in your private life or whether it is in your public life and I am talking about national security at that particular point in time versus why should anyone be put in the situation of having to choose between turning the lights on and keeping my family warm.

And this administration believes strongly that if we don't have a diverse portfolio and to try to keep these plants online obviously doing it with as much sensitivity as we can to the environment, and again in my opening remarks I made a comment that with 14 percent decrease in carbon emissions in this country that is leading the world. So the innovation and the technology that we have coming out of this country, but it is imperative that we don't allow political decisions to be made relative to our electrical, or excuse me, our power security in this country.

Mr. OLSON. Yes, sir. One further question on India, I went there last week on a mission to talk about LNG being exported to the great nation of India and they were gushing, guess who is coming this week or the next couple days, Secretary Rick Perry. You get there and find out that Prime Minister Modi has a very aggressive plan to clean up their extremely dirty air and that is with renewables, mostly wind and solar.

But the energy minister and their foreign secretary stated over and over that LNG natural gas is the economy of the now. The future is renewables. As you know, we have had a private contract between Cheniere and a company, a group called GAIL, there in India to export approximately seven metric tons of liquefied natural gas over the next 20 years. We agree that to make this viable and to make that transition they want to make they have to have better battery power, better storage and better power lines, and also make wind viable. So I want you to take that technology message to them. We are going to help you. And so any comments about your trip to India?

Secretary PERRY. Yes, sir. Two weeks ago, the first molecules of U.S. natural gas arrived at GAIL. I think the issue for them is to build out their infrastructure to be able to move that gas around. Not unlike, Mr. Chairman, what we have in this country. Yes, we are way ahead of them, but the point is if you are really going to be able to satisfy the economic needs and satisfy the national security needs of your people you are going to have to have the distribution system as well.

So that is another area. U.S. pipeline technology, U.S. pipeline companies, I think there is a real opportunity in not just India, but India is obviously a huge market in our ability to deliver U.S. innovation, U.S. natural resources into that country are a great opportunity and that is the real driving factor of why we are headed that way.

Mr. OLSON. Namaste. I yield back.

Mr. UPTON. The chair recognizes the gentleman from California, Mr. Peters.

Mr. PETERS. Thank you, Mr. Chairman.

And I thank you, Mr. Secretary, for being here. I have the exact quote I will just read to you. When I asked you about the budget that was proposed by the President you said I didn't write this budget, my job is to defend it which from time to time is counter to what I think is good. So I know you are here to do a job, but maybe we can—

Secretary PERRY. Yes, sir.

Mr. PETERS [continuing]. Get some of your personal opinions on this. The budget makes cuts to the Office of Science which includes an important project named the International Thermal Nuclear Experimental Reactor which is sometimes referred to as ITER. Here is a program where the United States is one in an international partnership developing energy of the future by proving we can make fusion work. The U.S. contributes 9 percent of the project funding, but 80 percent of it is spent in the United States and we have access to one hundred percent of the intellectual property. And perhaps most important, when the technology is proven we can be part of the group that has ownership with monetizing capabilities instead of being a country that has to buy into the group.

So with all these benefits, why does the budget cut contributions to ITER?

Secretary PERRY. Mr. Peters, I think the basic messaging here on the reduction in that line item was, this is my observation just being a manager and having been in negotiations before, it was really poorly managed. And I think you know that. You all have been briefed on it. The previous management of ITER was very, very poor. They wasted a lot of money.

And they have new management in there. Mr. Bigot came over and we sat down and discussed this. I was impressed with his focus, his understanding, his recognition of the poor management before. We have as a matter of fact out of your district a couple of projects that are being funded, the Solenoid, \$75 million, and I think another aspect of the project that is ongoing that General Atomics is the deliverer, the manufacturer of, and we certainly support that and are funding that.

But with that said, if this committee and if Congress in a whole get comfortable along with obviously the administration, that it is headed in the right direction, we will make sure that the U.S. dollars that are expended there are expended properly and that there is good oversight and that we have the proper outcomes that we would be looking for.

Mr. PETERS. I appreciate the comment about the management. That is fair. Now that we have improved that, I certainly hope we appreciate the leverage that we get out of this potential.

Secretary PERRY. Yes, sir. Thank you.

Mr. PETERS. And so just outside my district, San Diego Gas & Electric built and it runs the largest lithium ion battery in the world as part of its grid operations. It is proving that projects like this can be a valuable part of the grid particularly for resiliency and safety. How does the DOE budget ensure new technologies for grid resiliency can be implemented and tested properly?

Secretary PERRY. And that goes right to the heart of our both Office of Science, Paul Dabbar, who is now the assistant secretary there I have great faith in his focus, and particularly we are supporters of, I have said before, the battery storage, the holy grail of electric power. I believe that. DOE and DOE labs working with private sector organizations like your constituents or right outside of your district are going to be key to that. So I am confident that what is happening in our national labs, the funding of those is appropriate to meet the needs of the battery challenges that face us.

Mr. PETERS. Thank you. And just with respect to NAFTA, do you think that the disruption of NAFTA will have a negative impact on energy prices for Americans and supplies for U.S. energy companies who sell to Mexico and Canada, even the way we talk about it right now?

Secretary PERRY. Not necessarily. I think generally speaking people are able to divorce the rhetoric with reality. For instance, Ray Washburne, who is the head of OPIC, he and I have had conversations with my counterpart in Mexico and private sector operators in the U.S. and their Mexican counter partners, if you will, to invest in Mexico's energy infrastructure. So I feel confident. I think there is an extraordinary opportunity there.

Mr. PETERS. I am going to run out of time. I appreciate what you say about rhetoric. I have got to tell you that NAFTA is so important—

Secretary PERRY. Yes, sir.

Mr. PETERS [continuing]. To our country and to my district in particular and I understand the talk about improving it. I think we had more leverage when we were dealing with 11 other countries. We could offer more to Mexico. But I certainly don't want to go backwards and some of the talk is, it looks like rhetoric is turning into policy and it concerns me. I just want to express that to you.

Secretary PERRY. Mr. Peters, just as an aside, every time I see Ambassador Lighthizer I tell him we have got to get a deal. Get a good deal, but we have got to get a deal.

Mr. UPTON. Mr. Latta?

Mr. Latta. Thank you, Mr. Chairman. And, Mr. Secretary, thanks very much for being with us again today. I really appreciate seeing you. And I think it is really important, because also in read-

ing your testimony about cybersecurity it is a big issue and in recent weeks we have read news stories about malicious agents working to undermine the safety and security of our nation's energy infrastructure. According to the Department of Homeland Security, this includes Russian cyber attacks that have remotely targeted the power grid, energy, nuclear, and commercial facilities in critical manufacturing sectors. More recently, we have seen cyber attacks against the electronic communication systems of several American pipeline companies. DHS is still working to determine who is responsible for these specific attacks.

And I believe from your response from the chairman of the subcommittee, the gentleman from Michigan, that you would agree that more needs to be done to address these attacks on our energy infrastructure. Is DOE working with DHS to identify the vulnerabilities that were exploited through these attacks and rectifying them and, if so, can you tell us what might be done and what is being done?

Secretary PERRY. Well, there is nothing more essential to America's national interest and for that matter our national security than our energy supply. The Department of Energy plays a very important role with that. We are the specific agency that deals with the energy side of particularly grid security, but we are also working with the other sectors, or not the other sectors but the other agencies as well, DHS, Department of Transportation, and DHS and Transportation Department leads cybersecurity support to pipelines. DOE works closely with them and other departments and we have some other stakeholders to protect the energy sector including the secure transport of our oil and gas. So we recognize the real challenges there.

One of the reasons that we are asking for the additional dollars to stand up this office of cybersecurity that we refer to as CESER, C-E-S-E-R, is so that we can focus the resources, use our national labs, working with these other agencies of government, to assure the American people that we have done everything within reason possible to protect the American people from these cyber attacks that are only increasing in intensity and frequency.

Mr. LATTA. Thank you. Given the nature of these threats, I believe it is more important than ever that Congress acts. That is why I have worked with my colleague, Representative McNerney, to introduce two bipartisan pieces of legislation to address the threat of cyber attacks. These two bills, H.R. 5239, the Cyber Sense Act, and H.R. 5240, the Enhancing Grid Security Through Public-Private Partnerships Act, was the subject of a legislative hearing held in this subcommittee last month.

Under H.R. 5239, the Secretary of Energy would be directed to establish a voluntary cyber sense program to identify and promote cyber secure products intended for these in the bulk power system. And do you believe that this policy would help improve the safety and security of our energy infrastructure and address these threats?

Secretary PERRY. It certainly on its face sounds like it. We will work with you in any way that we can to flesh out any details and information that we have privy to.

Mr. LATTI. I really appreciate that. Thank you. And along with Representative McNerney, I am also the co-chair of the Grid Innovation Caucus here in the House. The purpose of this caucus is to discuss the challenges facing the electric grid and to come up with ways that we can enhance its capabilities and securities. In addition to guarding against the threat of cyber attacks, will you go into more detail about other ways in which DOE is trying to improve the electric grid's capabilities to protect it from these cyber attacks?

Secretary PERRY. Yes, sir. We will work with you in—

Mr. LATTI. Well, I really appreciate it. Thank you very much, Mr. Chairman. I yield back the balance of my time.

Mr. UPTON. The gentleman from Pennsylvania is recognized.

Mr. DOYLE. Thank you, Mr. Chairman.

Mr. Secretary, welcome back.

Secretary PERRY. Mr. Doyle.

Mr. DOYLE. Like many on this panel, I am greatly concerned by the premature closures of nuclear plants around this country. John Hanger who was former Secretary of the DEP in Pennsylvania and head of the Public Utility Commission in my state put it succinctly. He said there are now 18 nuclear units that have closed or are scheduled for closure in the last 5 years. Three are in my State of Pennsylvania, Beaver Valley I and II, and Three Mile Island. Those three nuclear units generated 22 terawatt hours of energy in 2017, all the wind and solar in Pennsylvania generated 4 terawatt hours in 2017. This is putting my State at the edge of a clean air climate disaster.

Secretary Perry, I echo his concerns and would add that these nuclear plants not only provide good family supporting jobs, but also affordable, reliable, and greenhouse gas-free electricity. I just saw an interesting study that has come out by a think tank The Third Way that takes a look at the effect of these retirements of the nuclear portfolio and how it affects our ability to meet our climate change goals to reduce greenhouse gases below, 80 percent below 2005 levels by 2050. It would be virtually impossible for us to make that up, because as every nuclear plant retires even if we start greatly upping our renewables, they would have to make up for that loss before we start to add more carbon-free energy to our cycle. So I think it is a real problem.

I know FirstEnergy recently filed this 202(c) request with your Department and I saw you quoted as saying that that may not be the most appropriate and efficient way to deal with this, but it is not the only way. And while I applaud your caution on the 202(c) request, I am curious what other options you think are on the table. Is this something that can be settled at DOE or in Congress or at FERC? What are the other ways that this might be dealt with?

Secretary PERRY. Mr. Doyle, let me just say you are absolutely correct, very prescient in your observation about this country and the ability to deliver the energy needs with the premature in particular taking offline of coal and nuclear plants. I, like you, share a great concern about our ability to stay economically viable, but more importantly from a national security standpoint of taking care—

Mr. DOYLE. And an environmental standpoint if we are ever going to meet our goals for climate change.

Secretary PERRY. Absolutely. So to address the specific question, if you will recall, I want to say 6, 7 months ago, we put a 403 request in to the Federal Energy Regulatory Commission, to FERC, which we thought was an appropriate way to address this. They obviously did not. The 202(c) is an option. I would like to work with you and members of Congress on any other options that are out there that are reasonable that get the result of which we need in the result from my perspective is a diverse portfolio. And let me just add, I think it is really important for this country to have a nuclear, civil nuclear program in place. Too many previous administrations made some decisions that from my perspective put particularly the nuclear energy industry in jeopardy and we now see the results of that whether it was regulations, whether it was not supporting them in various—

Mr. DOYLE. Mr. Secretary, I would be happy to work with you on ideas to ensure that we keep our nation's leading source of carbon-free power online.

Let me ask you another question. Existing energy markets they don't seem to consider the environmental attributes of nuclear power, but there are some States like New York and Illinois that have implemented strategies focused on ensuring that the environmental benefits of nuclear are recognized. Other States, including mine in Pennsylvania, are considering similar strategies, but I understand that some parties are proposing rule changes at PJM that could punish these States by making it more difficult for certain plants or units to participate in the markets. Do you think that is good policy?

Secretary PERRY. I think any policy that restricts your diversity of your energy portfolio is not necessarily good policy. I think it is shortsighted.

Mr. DOYLE. I see my time is up. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Shimkus?

Mr. SHIMKUS. Thank you. Mr. Secretary, welcome. Since you appeared before us, our nation's nuclear waste management has passed a few notable anniversaries. December marked the 35th anniversary of passage of the Nuclear Waste Policy Act of 1982 which formalized the Federal Government's nuclear waste management program, as well as the 30th anniversary when Congress designated Yucca Mountain in Nevada the site as the location of our nation's first repository. Of greater consequence, January 31st marked the 20th anniversary from the year in which DOE was legally required to take title to spent nuclear fuel for disposal at Yucca Mountain. Since then American taxpayers have been paying billions of dollars to manage spent nuclear fuel in 121 communities around the country.

Secretary Perry, I would like to run through a few numbers with you quickly, and you probably know some of these and we can just kind of stick to the numbers because I have another question I want to get to.

Secretary PERRY. Yes, sir.

Mr. SHIMKUS. As of the end of fiscal year 2017, what is the approximate amount rate payers paid into the Nuclear Waste Fund to construct/oversee our nuclear waste management program?

Secretary PERRY. It is approaching \$40 billion. I think it is about \$37, \$37.7 billion.

Mr. SHIMKUS. And those are rate payers, people from states that had nuclear power that have paid in to solve this problem.

Secretary PERRY. That is correct.

Mr. SHIMKUS. How much did the value of the Nuclear Waste Fund increase during fiscal year 2017?

Secretary PERRY. Almost \$2 billion, I think \$1.7 billion is the specific.

Mr. SHIMKUS. That is the accrued interest on the base of the account.

Secretary PERRY. Right.

Mr. SHIMKUS. As of the end of fiscal year 2017, what is the total cumulative liability cost including future payments because Yucca Mountain is not yet open?

Secretary PERRY. Just a touch over \$34 billion.

Mr. SHIMKUS. So that is payments that we are liable for because we are not complying with law.

Secretary PERRY. That is correct.

Mr. SHIMKUS. And you are saying then the \$30-plus billion.

Secretary PERRY. Yes.

Mr. SHIMKUS. How much did American taxpayers pay in legal costs during the fiscal year 2017 because Yucca Mountain is not open?

Secretary PERRY. \$700 million.

Mr. SHIMKUS. So for my colleagues, we move this bill, this an issue I am fighting with appropriators and budgeteers. This is money that taxpayers are paying that is really not on the books and it accrues to almost \$800 million. What was the total increase in fiscal year 2017 in taxpayer liability in both actual payments as well as future projected liabilities?

Secretary PERRY. That one grew substantially, \$3.3 billion.

Mr. SHIMKUS. If you break this total cost down to a daily cost to taxpayers that escalated during just last year how much are taxpayers liable for on a daily basis?

Secretary PERRY. \$9 million per day.

Mr. SHIMKUS. That is a day. That is money that we could do, help our national defense, Title I programs, anything. That is just being paid because we are not complying with the law. So when people wonder why I get so focused, these are some of the reasons why. Last question in this area, how much was provided to the Department in fiscal year 2017—and I think I can add 2018 now—from the Nuclear Waste Fund for DOE to move forward with our Nuclear Waste Program and ultimately reduce our taxpayers' legal payments?

That is a zero, I am assuming. Not a one, it is a zero.

Secretary PERRY. That is a zero.

Mr. SHIMKUS. OK. And that is our liability as authorizers to push our appropriators to do what—

Secretary PERRY. And, I think, Mr. Shimkus, that is the reason that the administration requested \$110 million for the legal process

to go forward, to be able to get the answer of whether or not this facility is in fact what you all in Congress have said it is.

Mr. SHIMKUS. Yes. So the appropriation money is really to do the final adjudication with the Nuclear Regulatory Commission with you as an intervener with the State of Nevada to clarify the science. And that is the last part before we can then really start moving and addressing this.

With my 30 seconds left, I won't read the whole question but you have talked about the DOE and the great work it does. Obviously I am also very much engaged in the renewable fuel debate in this country. DOE has done a lot of good work on a study, I have quoted it before, the Co-Optima study. Are you familiar with it and what is your thoughts on it?

Secretary PERRY. Say it again, sir?

Mr. SHIMKUS. The Co-Optima study?

Secretary PERRY. I am not.

Mr. SHIMKUS. It is the high octane, it basically is addressing the high octane issue. We have a hearing tomorrow.

Secretary PERRY. I will get up to speed on it and get back with you and have a conversation.

Mr. SHIMKUS. Not a problem, I appreciate your time. Thank you.

Secretary PERRY. Yes, sir.

Mr. UPTON. The gentlelady from Florida.

Ms. CASTOR. Thank you, Chairman Upton. Good morning, Secretary Perry. Yesterday in our Oversight Committee we had Bruce Walker, your Assistant Secretary of Electricity Delivery and Energy Reliability who gave us an update on restoration of the grid in Puerto Rico. And I think everyone was very heartened by what he had to say and what the Department is doing to build a more resilient grid, a more modern grid, tapping the expertise of our national laboratories and working with private sector partners and researchers there on the ground.

And now Congress has provided the funds and overridden some of the language in the Stafford Act that says you have to just rebuild what was there, which if we did that that would not protect the taxpayers. So thank you and we will be watching for the modeling he said is necessary to do something very innovative there.

But then we get the budget request. And I am very concerned about how anti-consumer the administration's budget request is by eliminating our weatherization initiatives and energy efficiency initiatives that really help put money back in the pockets of consumers. This will hurt real people out there in the world. And then it is a budget request that sidelines science with devastating proposed cuts to clean energy research, smart grid R&D, and energy storage.

And I think in doing this kind of budget request really cedes America's leadership and it says to consumers you are going to have to pay more. And you know how competitive we are out in the world, it just doesn't meet the challenges that we currently face with the cost of the changing climate and watching the transformation in the energy sector.

The EIA has said wind, solar, and hydro now account for 18 percent of the energy generation in America. Solar is the fastest growing source of new energy worldwide because of its declining cost.

And yet, and you have said it yourself in testimony energy storage is the Holy Grail and yet what you said certainly doesn't match the budget request because developments and innovations in energy storage are absolutely crucial for modernizing our electric system.

The U.S. just hit a major milestone. We now have capacity to store 1 billion watts of power for an hour and while the U.S. is still leading in energy storage development, everyone says China is likely to pass us in the next 5 years. So it is very troubling your budget proposes to cut energy storage R&D by almost 75 percent.

And let me read to you directly from your budget request, so folks, get a handle on this. You want to discontinue support for engagements with States, utilities, and storage providers for conducting grid-scale field tests and trials. Discontinue support for engagement with State and Federal regulatory officials on efforts to understand regional market barriers to energy storage deployment. Discontinue support to States and regional entities on procurement, commissioning, and techno-economic analysis of deployed systems. Eliminate support for new collaborative test bed and field trials. Discontinue support for development of enhanced tools and data to U.S. industry for development and use of grid-scale batteries. And this goes on.

But why, you talk about energy dominance, but this is like waving white flags. Why would you propose such devastating cuts for a technology that would only increase the use of clean energy especially when our U.S. industries are in the fight of their life with China? So how do you explain that?

Secretary PERRY. Ms. Castor, thank you for recognizing the great job that was done by particularly the private sector down in Puerto Rico. They were men and women who left their families for long periods of time. I was on a call yesterday with the subsector council and just said thank you as you have today. So thank you for recognizing that.

Let me just briefly address your concerns here particularly on the issue of—and again I don't want to go back over what I talked with Mr. Rush about, but we see a lot of the dollars that have flowed into this area before particularly on wind and solar as areas where they are being substantially more mature. The cost of those have gone down. I think each one of them 65 percent at least over previous year to date costs. So we have seen some substantial decreases in the cost of getting those technologies to the marketplace.

And I think we are going through a shifting to battery storage and beyond batteries, if you will, which is a new focus in the fiscal year 2019 budget that we are going to be within EERE we are taking a holistic approach to energy storage. Early stage R&D is focused on controllable loads, on hybrid systems, new energy storage technologies, and again, this process is about finding the right balance and we are going to work with you to find that right balance.

I not only recognize but respect your position here and you are absolutely correct. We have a huge challenge with China not just in this area but in a host of other ones. Supercomputing is one of them that I will suggest to you is at the top of that list. If we don't get that one right we are in trouble.

Mr. UPTON. Thank you.

The gentleman from West Virginia, Mr. McKinley.

Mr. MCKINLEY. Thank you, Mr. Chairman. And thank you, Mr. Secretary, for particularly for your interest in preventing the premature closing of our country's coal and nuclear power plants.

But let me speak to a broader audience. This committee has held numerous hearings on this topic of grid reliability over the past few years. During that time, your last 10 years, 531 coal-fired units and 11 nuclear plants have been closed. Their output has been replaced with gas plants, but unfortunately only half of those plants have a firm supply for gas, meaning without a supply contract in a cold spell gas is understandably diverted from creating electricity for home residential heating. And according to NERC, in the past 3 years America has experienced over 4,000 forced outages of power plants across America due to a lack of fuel. Ninety four percent of those outages were gas-driven power plants.

So this should not, unfortunately, these statistics don't give me the confidence that closing more coal units and nuclear power plants is a dependable option for national security. And you have been talking about national security throughout your presentation today. For example, nationally, in January, NETL reported without the resilience of coal the East Coast would have suffered severe electrical shortages, leading, likely, to widespread blackouts.

And earlier this year, ISO concluded the possibility that power plants won't be able to get the fuel they need to run is the foremost challenge to a reliable power grid in New England. According to PJM, the PJM's market, it can also be shown that the demand for the grid could not have been met without coal. These are all quotes that are coming from major sources, major reliable sources.

So taking these reports in consideration, can you just imagine what our grid stability was going to look like with dependability and resilience if we have fewer coal and nuclear plants? Mr. Secretary, you and I have had numbers of conversations about it and this committee has been saying all along that our fuel security is a national security issue.

So, Mr. Chairman, I would like to submit for the record a series of documents, a letter that we have from 23 bipartisan members of Congress asking you to invoke 202(c). I have another letter that is written to the President, bipartisan support for some kind of implementation to save our aging coal and nuclear power plants. And we have four other letters of support from labor unions across the country and interest in saving and implementing 202(c).

[The information appears at the conclusion of the hearing.]

Quite frankly, Mr. Secretary, I believe it is time. You tried the 403. Some form of 202(c) or some other emergency act is necessary if we are going to have national security. So I am calling on you to use whatever legal power you have so that we can meet the challenges that our manufacturers need and our communities need all across America with having a reliable grid system.

So I would like to have your thoughts. Last Thursday I was with the President and he specifically said, I think in a crowd in West Virginia, I think we can work something out on 202(c). I know he has had conversations with you about that. Can you share the extent of not your private conversations, where do you think we are going with 202(c) or some component of that? Thank you.

Secretary PERRY. Mr. McKinley, I hope that your remarks have been televised and we can put them up because you have succinctly made the point for exactly what has to happen in this country from the standpoint of being able to protect the resiliency and the reliability of our electrical grid. And if you do not have sufficient coal and nuclear plants, the day is coming when particularly in the Northeastern part of the United States because of other restrictions that they have on energy flowing into that part of the world that the national security of this country is jeopardized.

I don't think that is appropriate in any way. Political decisions that put people's lives in jeopardy are inappropriate and I think this President understands that. He has had multiple conversations with me and others in his administration to find a solution to that. That is exactly what we are working on today. There are a number, as you said 202(c) is one of those, there may be other options which we need to look at as well.

Mr. MCKINLEY. Are we getting close to a decision?

Secretary PERRY. Expedition is of importance.

Mr. MCKINLEY. Thank you. Thank you, Mr. Secretary, and I yield back.

Mr. UPTON. The gentleman's time is expired.

The gentleman from Maryland, Mr. Sarbanes.

Mr. SARBANES. Thank you, Mr. Chairman.

Thank you, Secretary Perry, for being here. Last October when you were here we talked about these ongoing threats to our national security, a little bit different from what you were just speaking about, which is the national security associated with maintaining a kind of diversified portfolio of energy sources. This is more about the cyber attacks that are coming in and we already know that there has been hacking attempts by the Russians against our elections last year.

But we now know last month the Department of Homeland Security, FBI, publicly accused the Russian Government cyber actors of a multi-stage intrusion campaign that is going after the energy infrastructure. And I assume, I know that you view that as intolerable those kinds of attacks on our energy security framework, presumably.

Secretary PERRY. Oh, absolutely. Yes, sir.

Mr. SARBANES. And in the budget for fiscal year 2019 there is \$96 million proposed for a new office to address cyber threats coming in against the energy sector and I appreciate that attention being given. I think we need a little bit more knowledge here in Congress to be able to respond appropriately to the proposal with respect to cybersecurity in combating these cyber threats. And last October you may recall I asked whether you would be willing to come and do a briefing on that specific topic. We haven't had that yet so I would like to reiterate that request for a briefing.

We can try to work with the committee. Obviously Congressman Latta, McNerney, and others have a real interest in this. I am sure the chairman does as well. So I just wanted to ask if you would be willing to work with the committee and our office to try to get that kind of a briefing together.

Secretary PERRY. Yes, sir. We will work with the committee.

Mr. SARBANES. Thank you very much. I want to talk now about a proposed cut in the budget. It is a 70 percent cut to the Office of Energy Efficiency and Renewable Energy for fiscal year 2019. This program, the EERE program, as many colleagues of mine have been pointing out, has been a very smart return on investment for taxpayers, a net benefit of \$230 billion when you look at what has resulted from it.

I wanted to talk a little bit about what it means in my own district. One of the programs inside the EERE program or initiatives was the SunShot Initiative and that has been targeted for a 67 percent cut. This initiative was one where the Department of Energy would set a goal of capturing the potential of solar technology, which everybody acknowledges is critical in making solar electricity more affordable, by 2020. In Baltimore we actually worked with the Department of Energy to bring that potential to low-income homeowners so that all communities would be able to take advantage of low cost solar and energy.

So it has meant a great deal to Baltimore. Over the last few years we have been able to put in 53 rooftop solar installations for low-income homeowners. There is 990 additional ones planned over the next 2 years and with DOE's continued support the Baltimore Shines model, which is our local sort of version of the SunShot Initiative, if you will. This can really be a model across the country and we think can lead in terms of what it means to have diversified financing for low-income solar installation.

So the basic question here is does your Department remain committed to the goals of the SunShot Initiative which seems to be like the terminology of it or the name of it is being pushed aside. It is hard to keep track of where your commitment is and the Department's commitment is to this solar technology advancement is. And will you maintain the same commitment within the Solar Energy Technologies Office that has been a hallmark up to this point and further commit to making sure that low-income communities are in a position to take advantage of these low-cost energy and skilled job opportunities which are available within the solar technology industry?

Secretary PERRY. Yes, sir. Mr. Sarbanes, let me work with you. I am not that knowledgeable with that specific program from a granular standpoint and I want to be able to give you an appropriate answer so I will follow up.

Mr. SARBANES. I appreciate that. I think if you look inside the Department's data on this it is quite impressive and we can help present some of that back to you as well.

Secretary PERRY. Yes, sir.

Mr. SARBANES. Thank you.

Mr. UPTON. Mr. Kinzinger?

Mr. KINZINGER. Thank you, Mr. Chairman. If I can get Mr. Flores' attention for a second, yes, there you go. Thanks.

Mr. Secretary, thank you for being here. As you may or may not know I have four nuclear power plants in my district which is the most of any in the country. It is eight reactors. Obviously that is many locations for spent fuel storage and so nuclear is extremely important not just for our domestic energy production, but one of the things last time you were here you and I talked a little about

was energy as a tool of national security and the importance of that and the role that that plays.

Just this week you made the point that every molecule of American gas that goes into Europe is a molecule that they don't have to get from Russia and be held hostage. I know you are aware the Russians are building or considering about 55 nuclear projects around the globe and for China that number is closer to 200 projects. Does your sentiment about Russian natural gas apply to nuclear power as well, sir?

Secretary PERRY. Yes, sir. It does. And I think it goes right to the heart of the agreement with Saudi Arabia that is being negotiated now, the 123 Agreement, in the standpoint of if we do not succeed in that effort the alternatives are China or Russia. Number one, neither of those countries care about nonproliferation, and the other one is we will lose the opportunity to develop our supply chain and our intellectual chain that will further put America at a disadvantage. And not just in the civil nuclear side, but sometime down the road on our ability to protect this country from a weapons standpoint. So this is a critical time in American history relative to supporting nuclear energy, civil nuclear energy.

Mr. KINZINGER. Thank you. And I appreciate that your budget request prioritizes nuclear energy research, nuclear security, and of course Yucca Mountain. However, I remain deeply concerned about the state of our domestic nuclear industry as we have talked about. I have introduced legislation with my friend, Mr. Doyle, to make common sense reforms at the NRC to provide existing plants some relief, but without a strong domestic industry how do we expect American technology and, more importantly, safety culture and nonproliferation standards to compete with state-run power companies like Russia and China. So, overall, what is the DOE currently doing or planning to do to support our domestic industry and reaffirm our global leadership?

Secretary PERRY. Well, obviously the administration is the message is clear not just on the nuclear side but coal as well and it is not just those two. This administration is committed to a broad portfolio of renewables of gas, of hydro, coal, and nuclear.

Mr. KINZINGER. And while I believe that H.R. 1320 is part of the solution, there are several options to put the domestic nuclear industry on steadier ground and increase our global competitiveness. Can you elaborate as much as you can on DOE's Light Water Reactor Sustainability Program which is looking at extending existing licenses from 60 to 80 years?

Secretary PERRY. Yes, sir. We will continue to promote those technologies as best we can. We think that again this plays into the diverse portfolio and new technologies whether it is clean coal technologies, whether it is—I was on the West Coast at Livermore Lab 2 weeks ago looking at technologies that are making our wind turbines more efficient. So there is a host of innovation rather than regulation is the real motto here from our perspective.

And whether it is in the nuclear side of things, whether it is in the fossil fuels, whether it is in the renewables, the national labs and the dollars that you all are authorizing for these national labs will go a long way toward making America more competitive in the global energy marketplace.

Mr. KINZINGER. Thank you. And, lastly, do you believe that wholesale energy markets can do a better job at valuing the unique resource attributes of nuclear power, and if so how can DOE and Congress help to reform these energy markets? What role can we play in doing so?

Secretary PERRY. Well, I think one of the roles that DOE needs to play in this is to rebalance that obviously previous to this administration coming into place there were some thumbs on the market and at least we should take that pressure off of the direction that those markets were headed. Obviously there were some political considerations in the previous administration that they were not fond of coal, they were not fond of nuclear, and both of those industries paid a price for it. They had their favorites in the arena and they supported those. What we are looking at is to rebalance, if you will, to take the thumb off of the market scale.

But with that in mind, the more important issue is one of national security. Being able to know without a doubt that the energy supply will be there when we need it whether it is from a cyber attack that stops the transmission of gas somewhere, whether it is a hurricane that hits the, God forbid, not again, the northeastern part of this country, the national security side of this is even more important than the economic side of it.

Mr. KINZINGER. Thank you, Mr. Secretary. I appreciate you being here and I yield back.

Mr. OLSON [presiding]. Time has expired.

Mr. Tonko for 5 minutes of questions.

Mr. TONKO. Thank you, Mr. Chair.

Welcome, Secretary Perry, and thank you for returning before the committee. Over the past year I haven't agreed with all of your decisions or priorities. I thought the notice of proposed rulemaking was incredibly misguided, but overall, and it might surprise you to hear me say this, I think you have done a fine job as Secretary.

Secretary PERRY. Yes, sir.

Mr. TONKO. As far as I am aware there have been no major scandals or extravagant waste of taxpayer dollars. You have visited many national labs and it seems like you believe in the mission of the agency, all of which is more than I can say for some of your cabinet counterparts.

With that said, I am concerned by a number of the proposed cuts in fiscal year 2019's requests. Many of them have been mentioned already, EERE, the Office of Science, grid modernization programs, and the elimination of ARPA-E. In the past you have stated support for ARPA-E and DOE's innovation budget. Last year you testified that energy innovation is a part of DOE's core mission and I think you might agree that cuts of the magnitude that have been proposed are not good for the future of America's global energy leadership.

So I would encourage you to push back on OMB to ensure innovation continues to be a top priority of the agency. Specifically, now that Congress has appropriated fiscal year 2018 funding for programs that the previous request proposed eliminating, I expect we won't see a repeat of last year's impoundment of ARPA-E funds or a delay of weatherization funding to states which they are expecting on July 1.

But I want to focus on a different issue. Mr. Secretary, are you familiar with this recent National Energy Technology Laboratory report entitled, "Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units"? It is dated March 18th, or March 13th, excuse me, 2018 and it was posted on DOE's website on March 27th.

Secretary PERRY. I am not an expert at it, but I am certainly familiar with it.

Mr. TONKO. OK. Are you aware of any DOE political officials that discussed this report as it was being developed by NETL?

Secretary PERRY. I am not.

Mr. TONKO. Would you be willing to share any communications between DOE officials and NETL about the report with the committee?

Secretary PERRY. I would be happy to.

Mr. TONKO. Thank you. The reason I ask is because this report is cited numerous times in FirstEnergy's section 202(c) request which was submitted just 2 days after the report was published on DOE's website. I want to take issue with how the report represents the data to conclude coal made the grid more resilient during the bomb cyclone.

I think most economists and grid operators agree on what happened. There was greater electricity demand, prices increased, and that allowed marginal power generators to come online. In PJM those are coal plants that under normal circumstances are not economically competitive. We saw electricity markets at work. When demand increased, more expensive generators could operate. This is evidence of coal's cost, not its resilience. In fact, according to PJM, at times coal plants experienced higher failure rates than other resources.

This notion that the only thing standing between us and blackouts is aging coal plants is just not accurate. What we might agree about, but I suspect for different reasons, is the premature closure of a significant amount of clean energy resources would be bad for air pollution as well as our short and long-term emissions reduction goals. If that is the case, we should look at what has been done by States, States such as my home State of New York, to preserve and compensate zero emissions generation. Or if you prefer an in-market solution, consider what New York's ISO is working on to develop to price carbon within the market.

These options are not without their flaws or opponents, but they do represent a serious path forward to address some of the issues you have been discussing this past year. But ultimately these are policy decisions for States or for Congress. Acting under the pretense of an emergency to justify unilateral agency action is not good for consumers or the people responsible for operating our grid.

So, Secretary Perry, do you have any thoughts on the role or appropriateness of States taking action to support zero emission generators through clean energy standards or similar programs?

Secretary PERRY. No, sir. I encourage States to get involved with making their states more competitive. I certainly did that when I was the Governor of Texas and we saw a reduction, almost 20 percent of total carbon footprint, over 60 percent of both CNO_x and

SO_x during that period of time. So the point is, states can have a real role in this.

With that said, from my perspective this issue that we are facing and I recognize—and by the way thank you for your kind remarks. My wife doesn't even agree with me all the time, so—

Mr. TONKO. OK. Well, I need to meet her then.

Secretary PERRY. Yes, sir. I am going to show her this, if you don't mind. But the point is that there are real national security implications here. And I will finish with this. As the Governor of Texas I brought in ERCOT, which is our big Electric Reliability Council that oversees our generation in Texas. And I think it was late spring of one year we had had a very hot summer, which we typically do in Texas, and we had had some brownouts. We were trying to manage the system.

And I shared with them, I said, listen, you are the expert here, but I don't want to get a phone call from citizens of this state because you weren't prepared and you didn't put in place the needed generation capacity to be able to deliver electricity to a city like Dallas that has had 15 straight days of 105-plus degree temperature and a grandmother has died. I said that is not a conversation that I am going to accept, and the same is true as the Secretary of Energy.

And the administration is focused on making sure that we have the resiliency and the reliability of our grid, and I want to work with you. I will work with the states as well to find the solutions to this. But I don't think we have time to be studying this anymore to the standpoint of oh, let's just kick the can down the road. I think we are facing with these plants being scheduled, some of them prematurely, to come offline, I just don't want a call from somebody in Upstate New York because the power has gone out because we didn't have the political courage to put into place a strategy that made sure that a citizen of New York is never going to have to make the decision of whether or not we are going to turn the lights on or are we going to keep our family warm.

Mr. TONKO. I have exhausted my time. I would just say that New York did make certain that they had their power supplies met and with zero emissions being the guiding force. So I think that is the difference here.

But I yield back, Mr. Chair.

Mr. OLSON. Time is expired.

Mr. Griffith, 5 minutes for questions, please.

Mr. GRIFFITH. Thank you, Mr. Secretary. I appreciate you being here. All my questions have gone out the window because of comments that have been made of recent or at least a lot of them have.

You were very kind to the previous administration to say they put their thumbs on the scale when they were looking at various energy sources. In my district which has got natural gas, predominantly coal, we felt like it wasn't a thumb on the scale, we felt like it was a boot on our necks. We had thousands of jobs lost, families disrupted, communities losing businesses left and right, hospitals closing down because they no longer had the big employer at the coal mine to pump in the insurance into the hospital and the money coming in there. It was devastating.

And so I was kind of surprised, one, that Mr. McKinley missed the NETL report in his detail. He kept going. I guess he had to have some time for questions and so he left that one out. But further that Mr. Tonko doesn't understand. And he is a good man, but he doesn't understand. It would be easy for people who were that desperate like a thirsty man in the desert who finally discovers an oasis to consume that NETL report and put out the request for 202(c) relief within 2 days because the coal community has been desperate until you all have come along and not wanting to put your finger on the scale at all but wanting to make sure that there is an all-of-the-above strategy for the United States, and I thank you. Would you like to make any comment before I go on?

Secretary PERRY. Go right ahead, sir.

Mr. GRIFFITH. All right. So I appreciate that and I do have this to say although it is not your Department. He indicated that, the fact that we had to use the coal and it cost more than that the markets at work. It is also Federal regulation. Because what we need to do is we need to look at the New Source Review rules, because when a coal-fired power plant and lots of other businesses that use coal for power go in and they want to make one little change, even if it makes that plant more efficient, they have to then comply with all kinds of regulations.

I have a facility in my district which is not a power plant, another facility that I toured a number of years ago and they had a kink in their conveyor belt because at one time there had been a part of their paint shop on the end of the conveyor belt. They no longer had that paint shop or that painting capacity, I think it was lacquer, but they left the kink. And so we walked over the conveyor belt once and then we walked over it a second time where it just went out into empty space, and the owner said that because he had to meet those EPA regulations it was easier just to leave the kink in the conveyor belt than to make his process more efficient. We need to make some changes there and I hope you would agree with that even though I know it is EPA's turf.

Secretary PERRY. Right. Mr. Griffith, I think you bring in a very high level way what this administration is focused on. The President has given clear directives to people like myself, Scott Pruitt, Secretary Zinke from a regulatory standpoint that getting rid of regulations where the costs outweigh the benefits is one of the real goals. And it has been, I think, very successful to date.

And the key here is having some common sense applied, being able to recognize that we have overregulated this country and those overregulations have cost this country a huge amount of jobs and untold wealth.

So you were spot on from the standpoint of the single most important thing I learned as a governor that tax policy is important. You don't overtax, but businesses know how to deal with that. It is when you have a regulatory environment that is strangled where you will lose your businesses. It is one of the reasons we were able to bring a lot of businesses out of California to Texas, no offense to anybody from California that is here. But the point is they were overregulating and businesses want to get out of that environment.

So the regulation side of what you are talking about is incredibly important. It is not just about being able to address the national

security side of things, the issues that we talk about whether it is a 202 or whether it is some other avenue towards making sure we have a reliable portfolio, but the regulatory environment in this country has to be addressed.

Mr. GRIFFITH. And I could not agree more. And I appreciate all the work that you all are doing in the administration to get this straightened out because it really has, I think, hurt our country.

That being said, let me switch to more positive things. Ms. Castor complimented you on the testimony of one of your folks at the O&I subcommittee yesterday related to Puerto Rico. I think that they are doing great work down there and we appreciate it, but I think we can also use that as a test bed for other areas that might get isolated in a disaster and look at doing microgrids and other things that we can move this country forward to make sure that we have our grid resilient. We have a perfect example. We are going to spend a lot of money there anyway. Let's spend it doing experiments to see how we can build the system for the rest of the country as well.

And with that, I know you agree but I have to yield back.

Secretary PERRY. Yes, sir.

Mr. OLSON. Time is expired.

Mr. Loeb sack, 5 minutes for questions.

Mr. LOEBSACK. Thank you, Mr. Chair.

Great to see you again, Mr. Secretary.

Secretary PERRY. Sure, thank you.

Mr. LOEBSACK. We don't have a lot in common, Iowa and Texas, but we do have wind energy in common.

Secretary PERRY. I have spent a lot of time in your home state, sir.

Mr. LOEBSACK. I am aware of that too. That is right. Seems like ages ago, but I am aware of that. Thank you. But I am happy about your support for wind energy. As you know that constitutes about 37, 38 percent of the electricity generated in the State of Iowa so it is really a great program. And thank you for coming back to this committee. I do appreciate the accountability that you demonstrate here. I think all of us do on a bipartisan basis.

As you know of course my home State of Iowa does lead the Nation in biofuels production. It is an integral part of our economy, the farm economy, and right now the farm economy is suffering. We have concerns about trade issues too, we don't need to get into that today. But that is certainly a bipartisan concern that we have in the State of Iowa, what is happening on that front. And I am sure that you are aware of the recent press reports about the waivers that the EPA has granted the small refineries to release them from their obligations under the Renewable Fuel Standard program including, actually, some of the Nation's largest and most profitable refiners.

And as you can imagine, the biofuels community has significant concerns about the apparent increase in the awarding of these waivers by the EPA and about the implications for the biofuels industry, the corn market and of course the farmers who depend upon the market and the workers in the industry, all the John Deere and a lot of other, the implement companies that are all related to this as well economically. And the small refinery waiver

process as you know requires the EPA to consult with the DOE and with you, the Secretary of Energy in particular, in review of the exemption petitions and unfortunately there is not a lot of transparency, if any, in this process.

So I do want to ask you, has the EPA consulted with the DOE on their issuance of these waivers as required by law?

Secretary PERRY. Yes, sir. I would suggest to you they have. I don't know the intensity and that may be the wrong word, but the depth of those negotiations and what—I know that they use us as the agency to advise them about how this would impact the energy sector. So, but for clarity purposes, EPA is who hands out those.

Mr. LOEBSACK. Right. But they are required by law to consult with DOE, with the Secretary of Energy, right?

Secretary PERRY. But they do consult with us. Yes, sir.

Mr. LOEBSACK. Does your office recommend that EPA adopt any small refinery waivers this year, and if so what waivers did you recommend?

Secretary PERRY. Let me go back and get the details of that for you so that I can give you specific and correct information.

Mr. LOEBSACK. Yes and I really do appreciate that because what I am going to ask you then, moving forward, just yesterday your counterpart at the USDA, Secretary Sonny Perdue, indicated that he believes the EPA is misusing the hardship waivers. And as you know our governor is in town today too and she is trying to get through to the President to talk to him about the RFS.

Secretary PERRY. Yes, sir.

Mr. LOEBSACK. Do you agree with Secretary Perdue that the EPA has misused the hardship waivers?

Secretary PERRY. I can't speak to that because I don't know the details of the issue. If I could just add one side of the story, one of the things that we are working on is to find some other, it would be, number one, I know my Iowa corn farmers pretty well and they really don't care where this ethanol goes as long as it gets to go somewhere.

Mr. LOEBSACK. I just had a meeting with a number of them last weekend.

Secretary PERRY. Yes, sir. And I respect that having been a former agricultural commissioner of the State of Texas. We are in conversations with my counterpart in Mexico and we were talking to him as late as this last month about being able to move U.S. ethanol into Mexico into their fuel mix because they are in the process of we understand that they are going to be mandating some ethanol.

Mr. LOEBSACK. And I really appreciate that. And we have to keep in mind too that we are talking about a lot of production of corn here in the country and of course around the world and ethanol is obviously one use of that corn. There is no question. But we have to make sure in those NAFTA renegotiations that we don't get our corn market in Mexico cut off as well.

So I just have some questions. I don't have time to go through them here, but I do want to submit these questions for the record having to do with the total number of refinery waiver applications that the DOE evaluated for the last 5 years. So a number of those and I would like to submit those for the record, Mr. Chair.

Secretary PERRY. So we will have them ready for you.

Mr. LOEBSACK. And thanks for your time today. I appreciate it. And we look forward to your answers to our questions.

Secretary PERRY. Yes, sir.

Mr. LOEBSACK. Thanks, Mr. Secretary. I appreciate it. I yield back.

Mr. OLSON. Thank you.

Mr. JOHNSON, 5 minutes of questions.

Mr. JOHNSON. Thank you, Mr. Chairman.

Mr. Secretary, good to see you again.

Secretary PERRY. Thank you, sir.

Mr. JOHNSON. I sure enjoyed our trip down to Piketon a few months ago.

Secretary PERRY. Yes, sir.

Mr. JOHNSON. You and I had extensive discussions when we were there and, like you, I support an all-of-the-above energy policy and I know you believe that as well. My district in Eastern and South-eastern Ohio, and you and I have talked about that a little bit as well, is no stranger to the benefits of a diverse generation with our abundance of both coal and natural gas. Many of the coal plants in the 6th District of Ohio, along the Ohio River are not only a reliable source of power but they are the strong economic drivers for the communities in which they exist. The people rely on them there for good paying jobs.

So I worry about the recent retirements and announced retirements of coal plants especially as Federal and State laws and regulations have played a major role in affecting these plants over the years. I know you have repeatedly expressed similar concerns and have pushed FERC on these issues. So my first question, are you satisfied with FERC's work to date on this issue and do you believe FERC and the RTOs and the ISOs are taking the right approach to these issues?

Secretary PERRY. Well, relative to the 403 that we sent up, I would have to be on the opposing side of, I wouldn't have sent them our recommendations if we didn't think they were correct. So, that is the only dealings that I have had with them to date.

Mr. JOHNSON. Sure.

Secretary PERRY. So my first experience of picking up that potato was it was pretty hot.

Mr. JOHNSON. Yes, yes. Well, second question, you state that the fiscal year 2019 DOE budget will help improve grid resilience and support generation diversity. Can you provide examples on how DOE will work towards these objectives?

Secretary PERRY. Well, obviously having grid diversity has to do with having resource diversity. One of our challenges is that in the course of the last decade the resources have changed drastically. You think back to 2005, just as Hurricane Katrina was coming into the Gulf Coast there was a fellow giving a speech about peak oil. Fast forward 10 years and the United States is in the process of becoming the number one oil and gas producing country in the world. I mean that literally happened in a decade, the explosion of renewables and the grid being able to manage all of that and so the technology to manage the grid. And I put that into the resiliency side and the reliability side.

So the challenges that are out in the world today and how quickly they came is a great testament to our national labs and the innovation that comes out of those national labs and our private sector working together in many cases. So the way we look at this is we have been blessed with a lot of resources. How you manage those resources both with innovation and with common sense, common sense part of this from my perspective is don't restrict resources getting into your grid that could put your national security in jeopardy, for instance.

So all of this is, it is quite a challenge, Mr. Johnson, as you know, but I am quite confident we are up to it and we will find the solutions that challenge us as a country.

Mr. JOHNSON. Yes. Well, thank you, Mr. Secretary.

Shifting gears just a little bit, when we were at Picketon, you and I, and I appreciate your support of all the stuff that is going on down at Picketon as well. I appreciate that very much. You have made reference to an Appalachian plan which relates to infrastructure to take advantage of our natural gas resources and other industrial resources in West Virginia and Ohio. Can you elaborate quickly what that vision looks like?

Secretary PERRY. Yes, sir. As the Governor of Texas I used to fret greatly in August and September about a Category 5 hurricane coming up the Houston Ship Channel, Mr. Olson, and creating havoc in the petrochemical footprint in the State of Texas which would have negative effect all over this country. Having a duplication of that somewhere made a lot of sense to me and why not put it where the resource is which is in the Appalachian region. You are sitting on top of the Marcellus, the Utica.

So if government will not be an impediment from a regulatory standpoint in particular, the private sector will come and fund that. This isn't a matter of coming to Congress and saying hey, will you put millions of dollars into this. Just don't get in the way.

Mr. JOHNSON. There you go.

Secretary PERRY. And help those States, West Virginia, Pennsylvania, Ohio, Kentucky, put that plan together. We are in the, I am not going to say nascent but we are in the early stages of conversation coordinating with those states, coordinating with other agencies to be able to lay out a plan hopefully before this year is out so that there is a clear opportunity for this country to have a duplication of that petrochemical footprint in the Gulf Coast of Texas in the Appalachian region. The economic impact would be stunning. More importantly, the national security side of it would be far-reaching.

Mr. JOHNSON. Makes perfect sense.

Thank you, Mr. Chairman. I yield back.

Mr. OLSON. The gentleman yields back.

Mr. Schrader, 5 minutes for questions.

Mr. SCHRADER. Thank you, Mr. Chairman. And thank you, Mr. Secretary, for being here. It is nice to have a normal and competent member of the administration before the committee here.

I would like to go back to Chairman Walden's comments regarding the Power Marketing Administrations. As you might imagine that is a bipartisan issue in my part of the country. On page 14 of your testimony you state budget proposes a sale of transmission

assets of the Western Area Power Administration, Bonneville Power Administration, and Southwestern Power Administration and to reform the laws governing how the PMAs establish power rates, et cetera.

Frankly, as a member of Congress in the Pacific Northwest, very concerned about the administration's continued insistence we sell off transmission assets at the Bonneville Power Administration and require them to sell power at market rates. Mr. Chairman, I guess I would like to enter into the record the bipartisan letter the Pacific Northwest delegation sent to OMB Director Mr. Mulvaney opposing this proposal in the 2019 budget.

Mr. OLSON. Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. SCHRADER. Thank you. The BPA is a nonprofit Federal wholesale utility and power marketer that receives no congressional appropriations. I repeat that, no congressional appropriations, and must recover its costs with revenues it earns like the private sector from selling wholesale power and transmission services. BPA provides approximately half the electricity used in the Pacific Northwest and operates three-quarters of the region's high voltage transmission grid. Selling off these transmission assets would fragment the grid, be devastating to the region, and provide a meager one-time asset that would not have any long-term beneficial effects with regard to our economy.

By requiring BPA to sell power at market rates would essentially be the death knell of BPA. BPA serves the public interest and has other obligations and as such BPA markets its power at cost. Historically, it has provided some of the lowest cost electricity in the Nation, natural gas having put some pressure on it obviously at this point. And that coupled with BPA's increased court-mandated spill and fish recovery operations, which account now for a third of the rates that Pacific Northwest folks pay and that Treasury consequently does not have to pay, has put additional cost pressures on the agency and driven their costs up some.

Requiring BPA to sell its power at market rates would drive them into the red, make them unable to meet their obligations to the Treasury, actually costing taxpayer money, strand the Federal Government with a very expensive, nonfunctioning asset and put Federal taxpayers on the hook for the fish mitigation costs which come to the tune of almost a billion, or I think a little over a billion dollars a year.

There has been overwhelming bipartisan, bicameral opposition as the chairman of the full committee testified to, opposition to the administration's proposal. Eight members of this committee including my fellow Northwest colleagues, Ms. McMorris Rodgers and Chairman Walden, sent a letter to our budget committee this year that I referenced asking them to reject the proposal, yet once again it seems like we are here.

So our region already produces some of the cleanest power that we have talked about, very affordable. We repay the Treasury with interest. So if you can explain to me what problem the administration is actually trying to solve with this proposal.

Secretary PERRY. Mr. Schrader, let me just remark that maybe it is my best addition here would be I am reminded of a Kenny

Rogers song where he talked about you need to know when to hold 'em and know when to fold 'em.

Mr. SCHRADER. I understand and appreciate that response and appreciate your—

Secretary PERRY. Congress has been very clear about this issue. I will be more than happy to carry the message back.

Mr. SCHRADER. Thank you very much, Mr. Secretary. Thank you for being here.

Secretary PERRY. Yes, sir.

Mr. OLSON. The gentleman yields back.

Dr. Bucshon, 5 minutes of questions.

Mr. BUCSHON. Welcome, Secretary Perry, from Southwest Indiana.

Secretary PERRY. Yes, sir.

Mr. BUCSHON. This committee has spent most of this Congress examining the country's electrical grid and throughout our hearings experts have stressed to us the importance of a reliable and resilient electrical grid. There are many sources of energy that can power the grid. However, coal-fired electricity is one of the most reliable fuel secure and affordable energy sources. This was evident during the 2014 polar vortex and again most recently with the bomb cyclone. It was the reliable baseload power plants such as coal and nuclear that prevented blackouts in many regions of the country.

Even with its reliability, coal-fired plants continue to retire at alarming numbers, and I know Mr. Johnson just mentioned this. Since 2010 more than one-third of the Nation's coal-fired power plants have shut down or announced plans to close. That is the equivalent of shutting down the entire electricity supply for Indiana, Ohio, Illinois, and Kentucky. Thirty nine coal power plants, power generating units have been forced to close in my home State of Indiana alone.

The 8th District of Indiana which I represent is home to all the coal mines in the State of Indiana which is responsible for more than 70 percent of the State's energy. Without traditional baseload energy sources such as coal being properly valued in wholesale markets plants continue to be at risk of retiring, leaving many of my constituents at risk of losing their jobs, seeing higher electrical bills, and providing less reliable energy to power our homes.

This is why I have introduced H.R. 5270, the Electricity Reliability and Fuel Security Act, which would create a temporary tax credit covering a small portion of the cost to operate and maintain existing coal-fired power plants. I believe the temporary tax credit which would last for 5 years is necessary to avoid more coal retirements while Congress, the administration, and grid operators work together to ensure the grid remains reliable and resilient.

Secretary Perry, do you think that you would be supportive of this legislation and the other efforts that Congress, DOE, FERC, and the grid operators are taking to properly value coal to prevent more power plant retirements and provide our nation with a more reliable and secure grid?

Secretary PERRY. Yes, sir. Mr. Bucshon, I think it is important that we put into place some processes that assure this country has a reliable and resilient grid and coal is going to be a part of that

and coal is going to be a part of the future energy supply of the world. By 2040, the estimate is at 77 percent of the energy produced in the world will still be fossil fuel, coal will be playing a major part of that.

Our goal and our part to play in this is that U.S. coal imports are up 61 percent from a year ago, we are going to continue. When I go to India we are not just going to be talking about LNG. We are going to be talking about coal and clean coal technology that is developed in this country. We want them, they are going to burn coal and we want them to use our technology to be able to remove the emissions that are harming the environment in that part of the world and globally as well.

So any reasonable approach to making sure that we have a reliable energy source in this country we are going to be working with and we certainly think your legislation is reasonable and heads in that direction.

Mr. BUCSHON. Thank you very much for being here, Secretary. Secretary PERRY. Yes, sir.

Mr. BUCSHON. Thanks for your work.

Mr. Chairman, I yield back.

Mr. OLSON. The gentleman yields back.

The chairman calls upon the gentleman from Texas, Mr. Flores, for 5 minutes of questions.

Mr. FLORES. Thank you, Mr. Chairman. Mr. Secretary, I think you and I are equally supportive of LNG and we recognize the incredible importance of LNG exports not only in terms of our balance of trade and economic opportunity, but also the geopolitical position that it places us in vis-a-vis some of the threats that we face around the world.

I know that you have taken some good steps to improve DOE's permitting process when it comes to LNG to clear the backlog of the applications that were pending that you inherited from the last administration, but I also understand that FERC is understaffed and that they are overwhelmed with their own backlog. Is there anything that you as the Secretary of DOE can do to help FERC with their backlog?

Secretary PERRY. I would be more than happy to have this conversation with the chairman and we are more than happy to assist them in any way we can.

Mr. FLORES. OK. It was my understanding you might be in a position to move some folks from Sandia temporarily to FERC to help with that. Anyway, if you can answer that supplementally for us that would be great. So, now with LNG out of the way, the next area that I am particularly focused on today is nuclear, particularly advanced nuclear technologies. The alma mater that you and I share, which I am pleased to represent, is a partner on some of DOE's university engineering university programs. I understand that the administration is conducting a wide range in review of nuclear policy, but while we await the outcome of that broader review what are the most important policies that Congress can advance now in the short term, in the near term?

Secretary PERRY. I am sorry?

Mr. FLORES. What are the most important policies that Congress can advance in the near term while we wait for the administration to finish its overall nuclear review policy?

Secretary PERRY. Well, certainly I think that making sure that the resources are appropriate on this national nuclear policy review, and we have for too long, I guess, Mr. Flores, this country has kind of put nuclear, our arsenal on the back burner, if you will.

Mr. FLORES. Right.

Secretary PERRY. The mid '90s and the Peace dividend and the world was going to live happily ever after and that is not the case. And we came to our senses, if you will, or the world became a little clearer in view and we saw that maybe we need to make sure that we have a nuclear arsenal that is modern. These things, they age just like any other infrastructure. Being able to modernize it, being able to look at new systems, whether it is delivery or whether it is the actual arsenal itself, is very much an important role that you in Congress are going to play from being able to fund it for one thing.

Mr. FLORES. Sure.

Secretary PERRY. We have a new administrator of the NNSA, a very capable individual who I think you will find very good to work with, very knowledgeable, and a good partner in this.

Mr. FLORES. When we look at the nuclear technology of the future, advanced nuclear reactors and small modular reactors, any time you have a first-mover technology like that there are some challenges in terms of trying to help, that our nuclear innovators face in terms of trying to get them off the ground so that they can move forward and get it into a position to be a commercially viable power generation source.

I would ask you if you would have your staff work with us so we can try to figure out what those challenges are and what Congress can do to develop the statutory framework to be able to address those challenges.

Secretary PERRY. Yes, sir. We think SMRs are incredibly important going into the future, the application that they can play particularly in for our national security. If the concern is about keeping these devices secure, obviously being on a United States military base is as secure a site as you can have. So, SMRs are going to play a very, very important role in the diversity of our portfolio energy production-wise going forward.

Mr. FLORES. OK. Well, thank you, Mr. Secretary. I have reached the end of my time. I do have additional questions that we will submit supplementally and I look forward—

Secretary PERRY. Yes, sir.

Mr. FLORES [continuing]. To working with you as we address our nation's energy policy. I yield back.

Mr. OLSON. Time has expired.

Mr. Cramer, 5 minutes for questions.

Mr. CRAMER. Thank you, Mr. Chairman.

Thank you, Mr. Secretary, for being with us again. Thank you for your excellent leadership at the very important agency. Before I drill down into what is most important to me today is specifically the fossil energy research and development budget, I want to associate myself with Mr. Peters' comments about ITER. Even though

San Diego is a long ways from North Dakota, his point about leveraging that resource, I think was made well. And I also want to associate myself with the fact that I do feel like there is a greater confidence given recent changes in leadership.

Secretary PERRY. Yes, sir.

Mr. CRAMER. And I appreciate your attention to that and your vast knowledge of it, so thank you for that. With that, I do want to get to the more concerning topic for me and that is the administration seems to be sort of sliding away from a commitment to at least if not pilot scale, commercialization gap with demonstration projects in the fossil energy R&D, particularly as it relates to where I think the folks ought to be and that is carbon capture and utilization and storage of CO₂ from coal-fired power plants.

Now we know and we appreciate in North Dakota your role, your agency's role in partnering with the Energy & Environmental Research Center at the University of North Dakota and some of our utilities, particularly Minnkota Power, in looking for some opportunity, testing some opportunity for Allam cycle or, and some of these technologies that will bridge, bridge coal, coal's past, and coal's future as a clean resource. But without the gap being filled or at least supplemented by the taxpayers, I don't know that we can get there, quite honestly, and yet we need it so badly.

Specifically, the administration's fiscal year 2019 budget proposal moves away from the research and development of carbon capture in reducing its R&D roughly 75 percent relative to fiscal year 2018. And of course both in '17 and '18, the Congress itself has had to sort of step it up. So given the fossil energy R&D request as a whole was increased relative to the President's request of fiscal year 2018, can you explain why the Department shifted so dramatically from carbon capture R&D?

Secretary PERRY. Yes, sir. Here is my observation is that the fiscal year 2019 budget will not impact the current activities that the Department has funded up in your part of the world. Plain CO₂ reduction, Regional Carbon Sequestration Partnership, that is going to continue on; a feasibility study on the Tundra project, that one is in that money stream for fiscal year 2019. The CarbonSAFE, S-A-F-E, activities, those are funded as well.

Additionally, on the carbon capture issue, last year in about May, I was in China for the Clean Energy Ministerial and we were able to get CCUS placed into that. Now obviously these are not dollars that are going to be spent in North Dakota and I understand that. But I think from the standpoint of the commitment of the agency to the carbon capture, utilization, sequestration—and actually yesterday Chairman Alexander in the Senate was talking about being able to find obviously using our national labs, using our universities that we have relationships with a use for carbon dioxide.

And again there is no eureka moment here, but, those are the exciting technologies and opportunities that we think are out there in the future that we are going to be looking at funding and, I hope you know that our commitment is very strong to that. Senator Hoeven, my former governor colleague, he and I talked at some length yesterday about the opportunities that we can work on together with North Dakota and DOE.

Mr. CRAMER. In my remaining seconds let me, first of all, strongly encourage you and invite you to North Dakota as it now warms up and thaws out to come and see the work at the University of North Dakota.

Secretary PERRY. Yes, sir.

Mr. CRAMER. Secondly, I want to ask for your assistance in advocating with us for the 45Q tax credit which was slightly improved in the most recent bill but not very useful until we reconcile IRS and EPA rules so that it is more useful for these types of projects. It is essential. And then there is another credit, the refined coal credit that I think just has to be extended so we can build this bridge again between basic research and commercialization. We are at the cusp and we run the risk of losing all those opportunities. As you said, innovation not regulation is our motto. I like it. Let's live with it. Thank you.

Thank you, Mr. Chairman.

Mr. OLSON. Time is expired.

Mr. Green from Texas, 5 minutes for questions. Are you ready, Mr. Green?

Mr. GREEN. Yes, Mr. Chairman.

I want to welcome the Secretary. My other job is I am the ranking member on the Health Subcommittee and we just finished a hearing upstairs, Mr. Secretary. And you and I have known each other since we could actually play basketball in the state capital. I want to thank Chairman Upton and Ranking Member Rush for having this hearing today and Secretary Perry for taking the time to testify with us.

DOE has many important missions in ensuring the adequate funding for the agencies essential. The President's budget fiscal year 2019 is a 3.8 cut from the fiscal year 2018 enacted level. Much of these cuts hit clean energy programs, grid operations, and next generation energy technologies. I am concerned that these cuts in these programs could have grave consequences to the environment at a time when many nuclear plants are going offline. Currently, there are four planned deactivation of nuclear plants in Ohio and Pennsylvania which generate 40 million megawatts of electricity, and PJM, more than all the power from wind and solar combined in PJM.

FirstEnergy Corporation recently filed a 202 request stating that immediate aid was needed for all coal and nuclear plants within PJM, not just their own. I have worked with many of my colleagues on this committee over the decades to updates to the Federal Power Act throughout the years including changes to the section 202(c). The current request concerns me in many ways. Section 202 has been used in the past for immediate crises from the California energy crisis in 2000 to the East Coast blackouts in 2003. The mechanism has historically been used on a short-term basis.

At a Bloomberg event recently, when asked to define an emergency you responded that you flip a light switch on and nothing happens. I agree with that characterization. Can you elaborate on that quote and what is in your mind and constitutes an emergency that justifies the use of 202(c)?

Secretary PERRY. Yes, sir. I think the observation is a very simplistic one that I use, but I think it cut right to the core. When you

have a use for your energy, whether it be a Wall Street financial institution, whether it be at the Federal Reserve and the computers that are there, whether it is on a military base to secure this country's liberties and freedoms, or if it is in your home and you have an all-electric home and it is a chill factor of minus 20 in the Northeast somewhere and you call for that power and it is not there that is an emergency.

And that is exactly the point that I was trying to make in a very simplistic approach, but I think it did make the point that if you don't have this electricity, if you don't have this reliable source, then we have a real challenge and a real problem in this country and that is the reliability and the resiliency issue of this grid. And being able to guarantee to the American people that that will be there is one of our roles, you as a United States Congressman and me as the Secretary of Energy.

So from my perspective, having a diverse portfolio is one of the things that we did in your home state over the course of the, particularly in the 2000s when they deregulated the energy market and we had this diverse, we developed more wind energy than any other state in the Nation, the gas that came online, the other incentives that the state, and I think Mr. Tonko was talking about giving states some of this responsibility and I totally agree with that.

But my point is the time for study is over, again from my perspective. We have got to act on this because I don't want to wake up next winter with a polar vortex that is bigger than the one that we had before and having taken some nuclear plants and some coal plants offline and not having that energy available to protect the citizens' safety and/or their security.

Mr. GREEN. Can you elaborate on the potential tools at DOE you feel could be better suited to securing a valuable emissions-free nuclear plants, for example?

Secretary PERRY. Yes, sir. Well, this one is going to be a bit of a bank shot, but I think it makes the point, Gene, that we are in the process of, previous administrations, not just the last administration but if you go all the way back probably 20–25 years, previous administrations have not put into place, didn't respect the nuclear power industry. I think they overregulated them. They put a lot of cost on them through regulations. The last administration took away our ability to process high-assay uranium for the purposes of civil nuclear. That was started by the administration before the Obama administration but they shut that down and then the private sector has no place for that fuel.

My point with all of this is we are at a critical place here today that if we don't send some messages whether it is making a good agreement with the Saudi Arabians to help them develop their civil nuclear program so that American contractors are going to have the supply chain to do that, that our universities don't have the incentives to put young men and women into the nuclear engineering field, all of that is going to come to a head and we are going to be at a critical position and I think it is sooner than we realize.

And if we don't have a civil nuclear program that is robust, it will soon have an impact on our ability to keep our weapons programs at the place because we won't have the intellectual capa-

bility coming up through our national labs to do this. You bring up an incredibly important issue, Mr. Green.

Mr. GREEN. Well, reliability is really important, like you said, when you turn on the light switch and they can't or the air conditioner or the heater, most of our problems in Texas when it gets real warm in the summer. Back we were joking yesterday, without air conditioning and elevators there would not be a Houston, Texas because of the heat from, literally, 1st of May to the end of September.

While I disagree with the recent notice of public review directed to FERC in the section 202 filing, I do think it is important we look at planned retirements across the country. While not rising to the level of immediate emergency, this is an issue both DOE and Congress should address putting forward. Obviously in Texas we have two nuclear power plants. Now we have an abundance of natural gas, and of course producing more wind power that was created during your administration when you were governor than any other State in the Union. So, and hopefully we will do some solar.

But in the Northeast they don't have the ability to do that oftentimes with wind or solar so it is basically older production whether it be coal or nuclear power. And that is why we need to see how we can do it because those folks, we don't want those folks freezing in the dark. But anyway I want to follow what the Department of Energy does and hopefully our committee will work with you on making sure that reliability is important, but we also need to see as best we can how we get it done.

Secretary PERRY. Yes, sir.

Mr. OLSON. My friend's time is expired.

I will call upon the gentleman from Oklahoma for 5 minutes for questions.

Mr. MULLIN. Man, Texans do stick together. No, I am kidding. Anyways, hey, thank you, Mr. Chairman.

Mr. GREEN. Well, Mr. Chairman, Oklahoma also steals football players from A&M and University of Texas and my alma mater University of Houston.

Mr. MULLIN. No, we don't steal. We recruit better. I mean obviously they want to go to, you know, a climate that they can live in. Anyway, hey, thank you.

And, Secretary Perry, I want to remind you of a time you met my son in Leader McCarthy's office. My boy wasn't very big at the time and he was talking to you. He was kind of like most little boys, he was looking around and you grabbed him by the shoulders and you set him on the chair and you said, young man, look at me in the eyes when you talk to me. And I had told my son that since the day he was born, and I really appreciate that. That meant a lot.

Secretary PERRY. I hope I did it in a very respectful way.

Mr. MULLIN. Oh, you did a hundred percent, but that is how we raise our kids. We are in Oklahoma too, and you look him in the eye and if he is not looking you in the eye I had probably thumped him in the head. It is just, that is called respect. So I appreciate that. That meant a lot to me.

I want to talk to you obviously about Yucca Mountain and DOE's requirements. Can you summarize DOE's legal requirements pertaining to Yucca Mountain's licensing application?

Secretary PERRY. Yes, sir. This body as authorizers and the appropriations process has, and I think the President's budget, \$110 million for the licensing to go forward. And I look at that as a way to get following the law. The law says that we will do this. There is an additional \$10 million in that appropriation request for temporary storage as well.

Mr. MULLIN. Is DOE required to create the Office of Civil Radioactive Waste Management to manage all these activities?

Secretary PERRY. Yes, by law.

Mr. MULLIN. In your last organizational chart for DOE was this office included in it?

Secretary PERRY. I can't answer that. You may know the answer to that.

Mr. MULLIN. Yes, I do, obviously. The answer to that is no. And as you alluded to a while ago, you are required by law to have that. Can you explain maybe why it was left out?

Secretary PERRY. Well, here would be my stab at that is that just because it is not named and doesn't have a line item does not mean that its duties are not covered in the agency.

Mr. MULLIN. Do you know who is covering that then? And I say that because we really aren't seeing any—

Secretary PERRY. Can I get back with you and answer these questions after I have had some time to dig down into it and get you the proper answers?

Mr. MULLIN. Yes, absolutely.

Secretary PERRY. Yes.

Mr. MULLIN. Because what I am trying to fish for here is if it is from the appropriation process, if that is why the office isn't manned, if that is why the duties of that office aren't being done, then for the Committee's purpose we need to know and we need to know what is keeping it from happening. And like I said, if it is from the appropriation perspective we also need to know what it is going to take to do that.

I think Mr. Shimkus alluded to how much it was costing the taxpayers right now just from the lawsuits that are taking place from the storage that we are supposed to taking care of as the United States Government and so I want to be able to help you. I want to work with you on it. So if you could please get back to my office.

Secretary PERRY. Yes, sir.

Mr. MULLIN. Let us know how we can help you because that was really the line of the questions what I was going to, and I will actually yield back the remainder of my time.

Mr. OLSON. Thank you to my friend from Oklahoma.

Mr. Walberg, 5 minutes for questions, sir.

Mr. WALBERG. Thank you, Mr. Chairman.

And thank you, Mr. Secretary, for always being open to be here and answer the questions. Thank you for the energy you put into being the Secretary of Energy as well. It is encouraging for those of us in the northern climes to know that that is actually happening.

I have the privilege of representing the energy district of the State of Michigan. Over 30 percent of all energy produced in Michigan is produced in my district. It is a fleet of all-of-the-above and some of that fleet sits right on one of the Great Lakes, Lake Erie, and so we are definitely concerned with cybersecurity. The challenge is not only that we are able to turn the lights on at any time but the environmental issues that go on thinking of the proximity there in the Great Lakes.

You recently formed the new Cybersecurity, Energy Security, and Emergency Response office. I think that certainly shows that you believe that elevating cybersecurity functions to a Senate-confirmed assistant secretary level will help intergovernmental and inter-agency communications and multidirectional information sharing with the Department of Energy's ability to appropriately and quickly address cyber-related emergencies, and I thank you for that.

My concern is the sustainability of the Department of Energy's leadership on this important issue. Cybersecurity was not a surpassing concern back in 1977 when the Department was organized. It certainly is today. In my bill with my colleague and Ranking Member Rush, H.R. 5174, we specify functions related to cybersecurity and emergency response that we believe should be specifically led by a Senate-confirmed assistant secretary. Will you work with us to ensure that we can elevate that, Secretary, to law?

Secretary PERRY. Yes, sir.

Mr. WALBERG. I appreciate that. Over the past 7 months you have had a lot of experience in dealing with emergency action in your Department. During appearances before the Committee in January, your Deputy Secretary and Undersecretary for Energy said that expectations for DOE's emergency response exceeded its authorities, if I recollect correctly. From your experience to date, do you think there may be some additional tools or authorities DOE could use to help improve the ability of the agency's deployment of resources in an emergency?

Secretary PERRY. Yes, sir. I think it is always a thoughtful conversation to have to discuss with Congress and other agencies to make sure, we complement when we need to complement. But if there is a direct line of authority that it is very clear, very precise so that no one gets confused about particularly during an emergency situation who is in charge.

Mr. WALBERG. I appreciate that and we would definitely want to work together with you on that. We want to examine things like surge funding or some other mechanism to enable DOE to have access to resources so the Department can respond more rapidly. So we hope that you can work with us on that.

Secretary PERRY. Yes, sir. Thank you.

Mr. WALBERG. Thank you, Mr. Chairman. I yield back.

Mr. OLSON. The gentleman yields back.

The gentleman from South Carolina, Mr. Duncan, for 5 minutes.

Mr. DUNCAN. Thank you, Mr. Chairman.

And, Mr. Secretary, thank you for being here. I just want to lend my support at the outset here for the Nuclear Waste Policy Amendments Act that Chairman Shimkus and Markwayne Mullin from Oklahoma have mentioned. Getting Yucca Mountain back on track is imperative because we have a lot of waste sitting around this

country and some of that is sitting at a place you visited back in February.

And I want to thank you for visiting the Savannah River Site and Savannah River National Laboratory this year. SRS is an integral part in the Department of Energy's industrial complex responsible for environmental stewardship and cleanup, waste management, and disposition of nuclear materials, along with a lot of other missions, ongoing missions that Savannah River Site has and I thank you for recognizing the important role of SRS through the DOE's fiscal year 2019 budget. I believe it provided for about \$1.7 billion, \$287 million above enacted 2017 levels.

I am on the Cleanup Caucus and we are concerned about environmental management and cleaning up the tank farms at sites like Savannah River Site, Hanford, and others. And the South Carolina Department of Health and Environmental Control describes the liquid waste management at SRS as the single greatest environmental risk in South Carolina. There are more than 30 years of nuclear weapons material that has been produced in South Carolina sitting in those tank farms and the ongoing environmental management efforts are there.

We also have the ability through the Defense Waste Processing Facility at SRS to vitrify that high level nuclear waste, turn it to glass so that it no longer poses a threat to leakage through those tanks and into the ground and aquifers. So the DOE's fiscal year 2019 budget requests an additional 74 million for SRS cleanup programs from the 2016 levels, emphasis on the liquid tank waste cleanup project.

What are DOE's top cleanup priorities for the site and how is your particular attention as Secretary going to facilitate tangible cleanup progress in South Carolina?

Secretary PERRY. Obviously we have a court-mandated requirement that we are very sensitive to in making sure that we have the resources to be able to do that. We have had the discussion substantially over the last year since I have been at DOE over the issue of how to deal with the plutonium and clean that up.

While I was out there I saw some good progress that is being made from the standpoint of the vitrification process that is going on there and the tanks that are going to be used to store that, being able to move the plutonium out of South Carolina. And we are already doing that with the D&D process, but to get that substantially more robust to be able to move that waste out of there on an expedited schedule is obviously high on our priority list, if not the highest priority there.

Mr. DUNCAN. Well, I appreciate that, Mr. Secretary. And whether it is at Hanford with their waste facility trying to vitrify the waste that is coming out of their tank farms, ultimately this high level radioactive waste needs to go to Yucca Mountain and right now the vitrified waste is sitting on a concrete slab under a metal building at Savannah River Site. It is actually down in the concrete as you saw.

Secretary PERRY. Yes, sir.

Mr. DUNCAN. Let me shift gears but stay at Savannah River Site because we have the MOX facility down there. We are under obligation under the Non-Proliferation Treaty with countries like Rus-

sia to do something with the Nation's plutonium that is coming out of the nonproliferation aspects and I believe the MOX facility at SRS is the right thing to do with that plutonium. Currently, we are committed to rid the world of about, I think, enough plutonium to make 17,000 nuclear weapons.

So I would love to see the continuation of construction at the MOX program and eventually completion. We have already spent a ton of money down there and I truly believe we can bring more efficiency to the project and it can be completed in a third of time and for almost half the additional cost than what the NNSA predicts. You indicated in your testimony that the 2019 budget continues termination activities for the MOX but provides \$220 million for use toward orderly, safe closure for the project. What do you envision for the future of this site, the MOX facility, and if not MOX, what do you determine to be the most efficient and effective way to remove the plutonium from South Carolina?

We didn't ask for the plutonium to come there. It is stored on site. It is not a long-term storage facility. It was brought there in order to be turned into mixed oxide fuel to be used in nuclear reactors around the country. That is what the purpose was.

Secretary PERRY. Yes, sir.

Mr. DUNCAN. We spent a lot of money. Where are we going from here?

Secretary PERRY. Yes, sir. And I will try to be as brief as I can. The issue on the reason that got started was an agreement with the Russians. The Russians have unilaterally walked away from that agreement. They said they would come back to the table if we met certain requirements and you know what those are, and they are unacceptable. They are asking us to do things that this country is not going to do to come back and sit down at the table.

So the way I look at that is they have walked away and we have to look at our options. This is a facility that is obscenely over budget. And again I don't want to rehash and relitigate all these numbers, but the fact is there is an alternative and the alternative is dilute and dispose which we are using now as a matter of fact shipping plutonium out of South Carolina to WIPP at this particular point in time. We think that is—

Mr. DUNCAN. The EPA has said that WIPP is not an acceptable site. Yucca might be. The thing is, Russia has walked away but the facts of the matter are we have plutonium sitting in South Carolina that has come out of that nonproliferation agreement. WIPP is not going to be ready. Yucca, we are struggling around here to fund that. MOX is absolutely the right facility and I would love to sit down with you and talk with you about that at some point.

Mr. Chairman, thanks for the leniency and I yield back.

Secretary PERRY. You are on.

Mr. OLSON. The time is expired.

Mr. Long, 5 minutes for questions.

Mr. LONG. Thank you, Mr. Chairman.

And thank you, Secretary Perry, for being here today.

Secretary PERRY. Yes, sir.

Mr. LONG. Texas A&M University, where is that located?

Secretary PERRY. Where is it located?

Mr. LONG. Yes.

Mr. OLSON. College Station, Texas.

Secretary PERRY. It is, some would say that—

Mr. LONG. I don't believe I yielded to you, did I?

Secretary PERRY. Some would say it is of the epicenter of the world, but we will just leave it at it is in Brazos County, Texas.

Mr. LONG. College Station, Texas?

Secretary PERRY. In the city of College Station.

Mr. LONG. And that is the only campus?

Secretary PERRY. No, sir. It is the main campus.

There are—

Mr. LONG. I didn't ask you about the main campus. I said where is it located?

Secretary PERRY. Oh, it is in College Station, Texas on Highway 6 and it goes both ways.

Mr. LONG. That is the only campus?

Secretary PERRY. It is the only main campus.

Mr. LONG. Where are the other campuses?

Secretary PERRY. The other campuses are—

Mr. LONG. Outside of this country, I will cut to the chase.

Secretary PERRY. They are in a lot of different places. John Dalton—

Mr. LONG. Like Qatar?

Secretary PERRY. And there is one in the country of Qatar right out of Doha.

Mr. LONG. I was in Qatar 10 days ago.

Secretary PERRY. Yes, sir.

Mr. LONG. And walked in and they are all Aggie there, trust me.

Secretary PERRY. Sure.

Mr. LONG. They are very, very happy with their affiliation and the students are doing great. Your picture was right there on the wall as I walked in and they are Aggie through and through. So I was pleased to see your picture on the wall when we went in and toured Texas A&M in Qatar just the other day.

Speaking of universities, I would like to speak about another university. In recent hearings with your senior Department of Energy leadership I asked about the Department of Energy's support of the University of Missouri's MURR Nuclear Reactor. The MURR reactor trains nuclear engineers, some of who are funded through Department of Energy's Nuclear Energy University Program.

Private companies in coordination with the University are seeking approval to produce lifesaving medical isotopes in partnership with the National Nuclear Security Administration, NNSA. And the University is currently studying a partnership with the NNSA to convert the reactor to use low-enriched uranium instead of highly enriched uranium or HEU. I have got to tell you I was disappointed to see that the Integrated University Programs were defunded in your fiscal year 2019 budget, but I hope you see the value in these activities as we do at the University of Missouri.

Will you please talk about the importance of our nuclear research infrastructure and how the Department of Energy supports this critical work particularly in its university programs?

Secretary PERRY. Yes, sir. I think you are making reference to the research reactor there at the University of Missouri and it is in medical isotopes and the manufacture of medical isotopes and

there are a number of places across the country that we are partnering with that. It is for precision medicine for some of the things that we talked about with Mr. McNerney. On our ability to practice precision medicine these facilities are really going to be important.

Mr. LONG. They are very important.

Secretary PERRY. We want to work with you and—

Mr. LONG. All right, thank you. With the ever-increasing cyber threats to the grid, I am pleased that the steps have been taken to create CESER, the Office of Cyber-, Energy Security, and Emergency Response and I look forward to that office getting up and running. In your opinion, since your confirmation has the electric grid become more or less responsive to cybersecurity threats?

Secretary PERRY. Well, I think the threat has increased but that shouldn't shock anyone. I think the threat potential is greater today than it was a year ago. Are we more resilient? I can't answer that with great definition. What I think is that we are exposed in certain areas. We need to be all hands on deck. That is the reason we are asking for the cyber office to be stood up.

With that said, our national labs are making some, I think, good inroads in both the defensive and offensive ways to deal with those that would attack our electrical grid.

Mr. LONG. Let me ask you one more question and I will be about out of time at the end of this probably, but the fiscal year 2019 budget calls for \$96 million in funding for the CESER, or for CESER. Can you explain a little bit about the program and how this money will be used to ensure we are securing our grid from the continuous cyber threats that we face?

Secretary PERRY. Well, the focus is on the cyber threats from both state actors, and we are talking about a year ago, Russia with Petya. We saw the impact on that. We have seen what has happened in Ukraine with two attacks on their power grid. The Iranians are who attacked the Aramco Electrical or their control panels. So nation state attacks are very real. As late as this last week we had conversations about, what can we expect with the Syrian issue. Should we be on more heightened alert? And I would suggest to you yes.

So the issue is this Office of Cybersecurity, our national labs working with the private sector, working with universities, I don't think it has ever been more important for us to be able to maintain the national security of this country relative to our grid, both as we have talked about at length here today about the resources to be able to keep the power to that grid, but also to protect that grid from cyber attacks is as important as it has ever been in our country's history.

Mr. LONG. Thank you. And thanks for being here today. It has been a long hearing and I am sure you are kind of tired. And I yield back.

Mr. OLSON. Time is expired.

The gentleman from Massachusetts has 5 minutes for questions, Mr. Kennedy.

Mr. KENNEDY. One more to go, Mr. Secretary. Thank you. Thank you for your patience. Thank you for spending so much time with

us and I will echo the comments of our colleagues, thank you for being so accessible, grateful that you are here.

As our nation makes the transition from a 20th to 21st century energy economy we know that innovative sources of power will be an important part of that generation mix. Wind power is a steadily growing portion of the energy sector that provides clean power to millions of Americans and creates thousands of jobs across our country. Your home State of Texas, Mr. Secretary, during your tenure as governor wind power resources and energy grew by leaps and bounds. It is my understanding that according to ERCOT, wind made up 17 percent of the fuel mix in 2017.

So I wanted to ask you, I think, a pretty general question to start. Do you agree, Mr. Secretary, that wind energy is an important part of our nation's power sector?

Secretary PERRY. Yes, sir.

Mr. KENNEDY. So despite this growth, and I appreciate the answer, we have only one offshore wind project coming online in the United States. Other nations such as the U.K, Germany, and China have developed these projects in their own waters. My home State of Massachusetts proposes to be a leader in this effort. In my district we have made significant investments in Fall River and in Dartmouth and just across the border, the district in New Bedford, to become a national leader in offshore wind. Just recently, the Department of Interior announced proposed sales of two areas off the coast of Massachusetts to develop offshore wind.

Yet, unfortunately, Mr. Secretary, America risks being left behind as our allies and peers lead the growth of an industry that remains largely dormant here despite the potential to boost the economy and create jobs. Even more concerning, I know you have already touched on this a bit, is this year's budget request from the Trump administration that included a 72 percent cut in the DOE Office of Energy Efficiency and Renewable Energy.

I am not going to make you comment on that again. I think you have been pretty clear about where you stand on that cut. But I do want to ask you how DOE is going to continue to support research and development of offshore wind.

Secretary PERRY. Mr. Kennedy, we discussed, this is an industry that is becoming mature. And so the private sector, the states, if, in my home state one of the reasons we had that big wind energy growth was that the state invested in the CREZ lines. We didn't subsidize the specific projects, but we basically said we are going to build these lines if you all will commit to building all these farms out. They did and you know what the results are. So I think not only the state but the private sector has the place to play this.

Here is what I will tell you that the DOE is going to continue to play a role in this, this is important. And again we were in Livermore this last week and the technology that is coming out of there, and this is on again rotor technology that makes these turbines substantially more efficient so that, then that gets commercialized and goes into the private sector where it makes it even more of a commercialized product in the market and more competitive.

Mr. KENNEDY. More viable.

Secretary PERRY. So my point is we are going to continue to be a partner, maybe not as big as we were when wind and solar was more in its infancy, we are shifting over to batteries and beyond battery to hydrogen fuels and some of the more immature but may have great potential energy sources in the future. So I am a big believer in wind and I hope that Massachusetts and other states that want to see a diverse portfolio, I don't think it is a good idea to have Russian molecules of gas in Boston Harbor. But if you can't get it from the West you are going to get it from somewhere and I think that is another debate or discussion that we can have into the future about how we make sure that this entire country has got an infrastructure that will allow for all of our citizens to enjoy this energy revolution that is occurring in America.

Mr. KENNEDY. And, Mr. Secretary, I appreciate that. I would agree with you it obviously gets complex as you try to look at the local resources and the voices of the local community. We do have a vibrant local community that is, I think, ready and willing to make this investment in coordination with our Federal Government partners, DOI, DOE, and I would ask just for you to keep it on your radar and as we to be a partner as we have seen and as we saw under your stewardship in Texas to see the growth of wind industry there.

Just to finish this to make sure that the point is clear and I think it is, in 2017 the Clean Energy States Alliance, a coalition of state energy agencies, released three reports on the future of offshore wind in the Northeast, the reports which were actually partially funded by DOE that projected that offshore wind projects in the Northeast have the potential to add more than 35,000 jobs in the region.

My colleagues, Niki Tsongas and Bill Keating, just introduced a bill that would create a grant program to support offshore wind job training including partnerships with colleges and universities and nonprofits and unions and local governments. Investment in that wind energy is more than just a clean energy future especially in my district, sir. It represents jobs, economic development, opportunity, education, and a whole new industry base and expertise that is homegrown.

I know the DOE mission is to "ensure America's energy security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technological solutions." So I would hope that you would continue to focus on how we can partner with you, understanding there has got to be a private sector component to this and a state component to this.

Secretary PERRY. Yes, sir.

Mr. KENNEDY. But I think we have seen there is a willingness to do so and we are going to need your help.

Secretary PERRY. And, Mr. Kennedy, one of the things that I will offer you and to make the introduction, the university in Texas that probably has as good of wind energy history and experience and expertise is Texas Tech in Lubbock, Texas. And getting the states to work with each other that may be a great opportunity. There used to be a real good Boston to Austin connectivity so Boston to Lubbock might be OK too.

Mr. KENNEDY. I appreciate that, sir. As long as we aren't talking football we are in good shape.

Secretary PERRY. Yes, sir.

Mr. KENNEDY. Thank you, sir.

Mr. OLSON. Time has expired.

Seeing that no further members wishing to ask questions, I would like to thank Secretary Perry for coming this afternoon. And I trust, sir, that the proceedings you talked with before did not happen here today. You know what I am talking about, correct?

Secretary PERRY. That is correct.

Mr. OLSON. And you are cleared now to depart the pattern with a proud, loud Aggie whoo.

And before we conclude I would like to ask unanimous consent to submit the following documents for the record: Letters from the Utilities Technology Council; a statement from the R Street Institute; three letters to the President from Members of Congress; a letter to the President from the International Brotherhood of Teamsters; a letter to the President from United Mine Workers of America; a letter to the President from the International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, and Forgers and Helpers; a letter to the President from the Utility Workers Union of America; a letter to Secretary Perry from the Energy Industry Trade Association; a letter to Secretary Perry from the Pennsylvania Public Utility Commission; a letter to Secretary Perry from FirstEnergy*; a response letter from PJM to Secretary Perry; a letter from NEI to Chairman Walden.

Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. OLSON. Pursuant to committee rules, I remind members that they have 10 business days to submit additional questions for the record and ask that the witnesses submit their response within 10 business days upon receipt of the questions. Without objection, the subcommittee is adjourned.

[Whereupon, at 1:21 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

*The information has been retained in committee files and can be found at: <https://docs.house.gov/meetings/IF/IF03/20180412/108114/HHRG-115-IF03-20180412-SD049.pdf>.

Congress of the United States
Washington, DC 20515

February 9, 2018

The Honorable Mick Mulvaney
Director
U.S. Office of Management and Budget
725 17th St., NW
Washington, D.C. 20503

Dear Director Mulvaney:

We write in advance of release of the President's Fiscal Year 2019 Budget Request to urge you to exclude any provision that would adversely affect the rates or operations of the Bonneville Power Administration (BPA). BPA is working aggressively with its customers, Northwest regional stakeholders, the federal dam operators and others to address the critical competitiveness challenges the agency is facing. We fear that budget proposals that would increase rates and risks are unproductive – and ultimately threaten the interests of federal taxpayers.

As you recall, last year's budget proposed divesting BPA's transmission assets. The Northwest delegation concluded this proposal would harm individuals and businesses, divert capital needed for further infrastructure investment in the Northwest, and undermine regional utility coordination. For these reasons, we led efforts in Congress to oppose that proposal. It is our hope that this proposal will not be included in the FY 2019 Budget Request.

In addition, past budget requests have proposed changes in the rate structure of BPA, shifting from cost-based to market-based rates. While this proposal may seem attractive given the electric industry's shift toward market structures, it would be costly for both ratepayers and taxpayers. Today, BPA's rates are above market prices. The Northwest is committed to bending BPA's cost curve and taking steps needed to make BPA the provider of choice when contracts are due in 2028. If market rates were imposed, Northwest public power utilities would see no value in continued BPA service. The consequence would be to leave the federal government holding non-economic assets, as well as financial responsibility for fish mitigation costs that approach \$1 billion per year. There would also likely be legal challenges to the proposal since the current power contracts explicitly included cost-based rates.

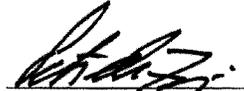
The entire BPA system—both the capital investment and operation and maintenance—is fully paid for by the users of the system. Divesting these assets to the highest bidder, or changing the rate structure, will merely jeopardize the consistent revenue that BPA sends to the Treasury each year. Furthermore, these changes would lead to certain rate increases for consumers, imposing increased costs on families and economic development.

We urge you to work with us collaboratively to address BPA's competitive challenges rather than pursuing unsound budget initiatives that could cripple the Northwest.

Sincerely,



Jaime Herrera Beutler
Member of Congress



Peter A. DeFazio
Member of Congress



Cathy McMorris Rodgers
Member of Congress



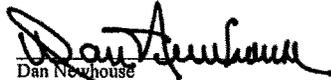
Earl Blumenauer
Member of Congress



Derek Kilmer
Member of Congress



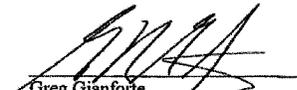
Suzanne Bonamici
Member of Congress



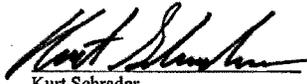
Dan Newhouse
Member of Congress



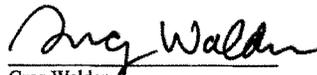
Denny Heck
Member of Congress



Greg Gianforte
Member of Congress



Kurt Schrader
Member of Congress



Greg Walden
Member of Congress



Suzan D. DelBene
Member of Congress

A handwritten signature in black ink, appearing to read "D. Reichert". The signature is written in a cursive style with a large, stylized initial "D".

Dave Reichert
Member of Congress

Congress of the United States
Washington, DC 20515

February 21, 2018

The Honorable Donald J. Trump
President of the United States
The White House
1600 Pennsylvania Avenue, NW
Washington DC 20500

Dear Mr. President,

We write to express our concern regarding the preservation of our nation's fuel-secure generation capacity and threats to the resiliency of the nation's electric grid. We must ensure that the grid provides affordable, reliable, and resilient electricity on a daily basis. As a matter of both national and economic security, the electric grid must have the resiliency to respond to extreme circumstances.

Fuel-secure baseload generators, primarily coal and nuclear, are under duress. An alarming number of coal and nuclear plants have closed prematurely and more are closing at a fast rate. This is especially true in the competitive, so-called merchant markets. The rate of plant closures has a compounding effect on grid resiliency – the ability to operate through an emergency or extreme conditions – by placing undue risk of severe consequences on the system.

Our nation's nuclear and coal plants are predominantly immune to short-term fuel supply disruptions, which makes them resilient. Evidence of how integral they are to the U.S. was demonstrated in 2014 when the Polar Vortex overstressed the grid, and many generation sources were unable to respond to power needs because of fuel supply disruptions. When the grid in much of the U.S. narrowly avoided operational failure, it was fuel-secure baseload power plants and not variable sources of electricity or those with interruptible fuel supplies that provided a resilient source of electricity.

A major factor putting coal and nuclear plants at a disadvantage are federal and state subsidies to intermittent power providers, making them artificially competitive. Additionally, government mandates for purchases of certain forms of electricity and excessive regulations on nuclear and coal providers negatively impact those resources' cost competitiveness. Adding to those headwinds, grid operators (Regional Transmission Organizations – RTOs) fail to create market rules that fairly compensate fuel-secure baseload generators for the resiliency they provide the grid. Coal and nuclear generators

maintain adequate fuel on-site to ride through an extended emergency, and do so without being compensated for that.

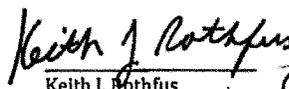
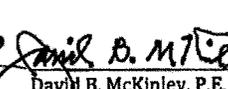
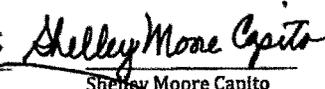
Beyond the risk injected into the electric grid carried over from the previous administration, there are national economic concerns at play too. If anti-resiliency bias within the RTOs' pricing models persists, thousands of workers and their families will be negatively affected. For generations, nuclear and coal have provided well-paying jobs in communities across America. Further plant closures will have huge negative economic effects, ripping across entire regions and drive up electric prices for ratepayers. Without your immediate help, these industries will not be able to provide the good jobs and the resilient electricity supply our nation currently has.

Mr. President, we are asking you to safeguard the grid's fuel security and direct the Secretary of Energy to exercise his Section 202(c) emergency powers under the Federal Power Act. We also request the Department of Energy evaluate the announced and expected retirement of additional fuel-secure baseload generation units and the potential national security and economic ramifications. Gambling with the resiliency of the electric grid is unnecessary and puts the safety of all Americans at risk.

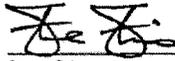
We applaud the extraordinary efforts you have already made to help turn our nation's struggling economy around, especially for middleclass workers. We hope that you will recognize the immediate severity of this issue and will take appropriate action to safeguard the electric grid's resiliency.

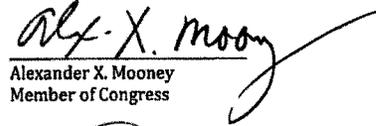
Thank you for your leadership, and your efforts to ensure that our nation has a safe and resilient electric grid.

Sincerely,

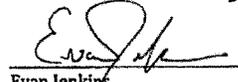
 Keith J. Rothfus Member of Congress	 David B. McKinley, P.E. Member of Congress	 Shelley Moore Capito U.S. Senator
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Mitch McConnell
U.S. Senate Majority Leader

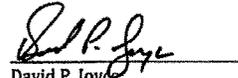

Steve Stivers
Member of Congress

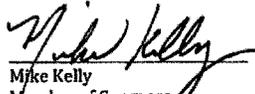

Alexander X. Mooney
Member of Congress

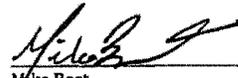

Andy Parr
Member of Congress


Evan Jenkins
Member of Congress

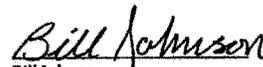

Scott Perry
Member of Congress

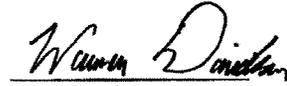

David P. Joyce
Member of Congress

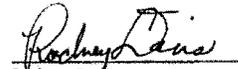

Mike Kelly
Member of Congress

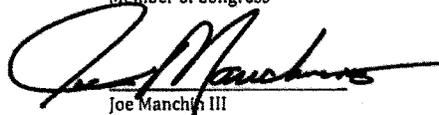

Mike Bost
Member of Congress


James Comer
Member of Congress

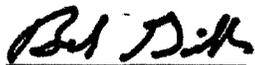

Bill Johnson
Member of Congress


Warren Davidson
Member of Congress


Rodney Davis
Member of Congress


Joe Manchin III
U.S. Senator

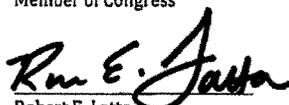

H. Morgan Griffith
Member of Congress



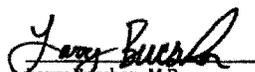
Bob Gibbs
Member of Congress



Glenn "GT" Thompson
Member of Congress



Robert E. Latta
Member of Congress



Larry Bucshon, M.D.
Member of Congress



Jim Jordan
Member of Congress

Rep. David B. McKinley, P.E. (WV-01)

Opening Statement, Energy Subcommittee Hearing, DOE Secretary Rick Perry

4/12/18

Mr. Chairman thank you for holding this hearing.

This committee has held numerous hearings over the past four years to examine all aspects of how American electricity is generated and priced into the competitive markets. After hearing testimony from industry experts and government officials, we are no closer to solving the complex question of how to provide a secure and resilient grid. We know recent severe weather along with cyber and physical threats, pose enormous challenges to grid reliability and resilience. The American consumer should not have to worry about the next cold weather event or cyber-attack.

I believe it is time for Secretary Perry to invoke his authority under Section 202(c) of the Federal Power Act or any other emergency authority the President or Secretary of Energy may have. We believe 202c provides the appropriate mechanism to protect the grid. The law gives authority to the Secretary when emergency conditions exist such as a shortage of electricity due to various reasons. The law also states, "or other causes" that threaten the availability of electricity. I believe there are important "other causes" which haven't adequately been addressed by FERC and the ISO's and RTO's.

Our electrical generation system and grid are changing very quickly, as these changes evolve we need to make sure these changes do not have unintended consequences. The rapid rise of natural gas electrical generation has proven to be a fantastic asset and something I will continue to support. However, as quickly as this resource develops, I'm afraid we are overlooking the potential downside associated with being too reliant on one fuel source. Especially a fuel that is dependent upon pipeline infrastructure that many states refuse to allow to be built.

In testimony on January 18th of this year, before the Senate Energy and Natural Resources Committee, Gordon van Welie, President and CEO of ISO New England stated, "we've known for several years that when it gets cold New England does not have sufficient natural gas supply infrastructure to meet demand for both home heating and power generation". Now is the time for this administration to act.

There are three very good reasons for Secretary Perry to invoke 202c. America faces an immediate national security threat of a cyber-attack focused on our electric generation industry and energy delivery systems. Our coal and nuclear fleets provides the resource capacity cushion needed to mitigate a potential attack, and a secure fuel source in case a cyber threat is

successful. Prematurely retiring these plants would be detrimental to our fuel security. This alone, is reason enough to invoke 202c. Second, the wholesale electricity markets are broken and have failed to mitigate the market distorting effects of tax subsidies and renewable fuel mandates implemented by states. Finally, it is the proper role of the Secretary of Energy to implement lawful policies to protect our grid and to protect the economic wellbeing of all Americans.

America faces a national security threat of a cyber-attack focused on our electric generation industry and energy delivery systems. Two years ago, our office hosted a cyber security seminar in Fairmont, WV. One industry expert who spoke was Joe McClelland who is FERC's cyber security expert. In subsequent meetings with my staff, Mr. McClelland discussed unclassified information about ongoing cyber-attacks on our pipelines.

Just last week an article outlines recent attacks on energy infrastructure. Additionally, "last month, investigators at the Department of Homeland Security and FBI warned energy companies of a year's long Russian hacking campaign that also targeted firms in the nuclear" industry. Pipeline compressor stations are prime targets. A successful attack on one compressor station can affect several natural gas power plants and grid reliability and resilience. Out of an abundance of caution, Secretary Perry should use 202c in *his judgment to best meet this immediate emergency and serve the public interest*. Prematurely retiring coal and nuclear plants would be detrimental to our fuel security needs.

In testimony before this committee we also heard from industry and government experts on the national security aspects of our nuclear power industry. A strong commercial nuclear industry is critical. Three nuclear industry components are intertwined with each other. The United States' nuclear weapons program, the Navy's nuclear propulsion program and reactors, and the nation's commercial nuclear industry. We heard from one witness who said, "The ability of the US to lead in nuclear safety, security and nonproliferation efforts is significantly lessened as commercial activity erodes".

Finally, in a March 2018 CRS Report on physical grid security, they state, "it has not necessarily reached the level of physical security needed based on the sector's own assessments of risk. Bulk power physical security remains a work in progress."

The wholesale electricity markets are broken and have failed to mitigate the market distorting effects of tax subsidies and renewable fuel mandates implemented by states. Dozens of witnesses have testified, hundreds of studies and millions of articles have been written about the market distorting features of our tax code. We have also heard from the ISO's and RTO's saying, "the markets are working", while ignoring the impact of these subsidies and tax policies have on the wholesale electricity market. It seems the only competition that is relevant in their minds is natural gas versus coal, the playing field is not level.

On a per-megawatt-hour basis, in FY 2013 solar received \$231 of support and wind received \$35, while natural gas and petroleum received 67 *cents* and coal received 57 *cents*, a factor of 405 times to one! And we are to believe this is a fair market? From a witness before this committee, *“Artificially promoting the development of wind and solar actually raises the true cost of electricity generation, because it is currently much cheaper to produce electricity (all things considered) through coal and natural gas plants, rather than new wind and solar”*.

PJM this Monday, acknowledged the short comings of their market and the distorting effects of subsidies by filing with FERC a plan to properly compensate base load power generators for the value they provide to the market. *“Left unaddressed the subsidies will crowd out efficient, competitive resources.... we seek the appropriate balance that respects state policy while avoiding policy impacts of a state’s subsidies on the market as a whole and on other states.”*

Critics say that invoking 202c is a bailout for the coal industry. This is not correct. The reason coal is at an economic disadvantage is due to conscious policy decisions made by Congress and state legislatures around the country. These politicians have distorted the market to such an extent that secretary Perry correctly stated, *“We don’t have a free market in that industry and I’m not sure you want one.”* Temporarily invoking 202c will give the markets and regulators the time needed to correct their policy decisions. A policy where all fuel sources are treated fairly and valued for the security they bring is the outcome we seek.

It is the proper role of the Secretary of Energy and President Trump to implement lawful policies to protect our grid and to protect the economic wellbeing of all Americans. Congress also has a role in asking for policies to be implemented. In this regard, 23 members of Congress signed a bipartisan letter to President Trump asking that 202c be invoked. A second bipartisan letter with four additional members of the House *“urge immediate action”* by the President to keep Ohio’s only two nuclear plants open.

In a time where it is the policy of this administration to achieve energy dominance, Americans had to worry about their lights staying on during the recent Cyclone Bomb weather event. In addition, American’s had to import Russian LNG just to make sure they remained warm during a relatively minor weather event. We were put into this situation by the shortsighted policies by New England politicians. What happens the next time?

In January of this year, ISO New England published a report detailing the crisis they face.

- ***Fuel-security risk—the possibility that power plants won’t have or be able to get the fuel they need to run, particularly in winter—is the foremost challenge to a reliable power grid in New England.***
- ***The region is vulnerable to the season-long outage of any of several major energy facilities***

ISO-New England recently asked FERC to keep Exelon's Mystic Generating station online, saying their retirement could put electricity reliability at risk. The early retirement of units 8 and 9 at the plant would pose an "unacceptable fuel security risk to the region during the winter months," ISO-NE said in a memo. We cannot agree more. The same should be done nationwide.

The shortsighted renewable policies implemented by some states has led to 73 gigawatts of electricity being imported from Canada, equivalent of 70-120 power plants. Each of the power plants replaced by the Canadian power were an economic driver in their communities. Each plant provided essential tax revenue to support the local government and services. In my state, one such plant provides 30% of the local tax revenue. If this plant is closed due to unfair competition and bad policy decisions made on the national level, it will threaten hundreds of West Virginian's economic security.

Conclusion

I urge Secretary Perry to exercise the powers granted to him via section 202c for a temporary two-year period. This will allow the markets and policy makers the time needed to come up with a correct and fair solution addressing national security and past bad policy. Once we prematurely retire nuclear and coal fired plants we potentially put our economy in jeopardy. Once a plant closes it will not come back. A time out during this rapidly changing time, is a wise thing to do.

We have been warned about potential problems on the immediate horizon, but because of our polarizing politics our institutions have been unable to respond to the challenge. There were those who said the Titanic was unsinkable, experts after the fact said we were not creative enough to imagine 911, now we should not foolishly put our grid at risk. Please invoke 202c to help all Americans.

Congress of the United States
Washington, DC 20515

February 9, 2018

The Honorable Mick Mulvaney
Director
U.S. Office of Management and Budget
725 17th St., NW
Washington, D.C. 20503

Dear Director Mulvaney:

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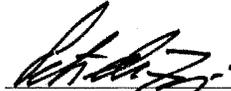
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We urge you to work with us collaboratively to address BPA's competitive challenges rather than pursuing unsound budget initiatives that could cripple the Northwest.

Sincerely,



Jaime Herrera Beutler
Member of Congress



Peter A. DeFazio
Member of Congress



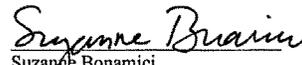
Cathy McMorris Rodgers
Member of Congress



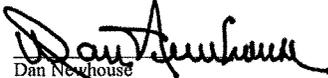
Earl Blumenauer
Member of Congress



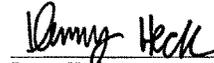
Derek Kilmer
Member of Congress



Suzanne Bonamici
Member of Congress



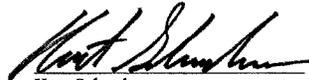
Dan Newhouse
Member of Congress



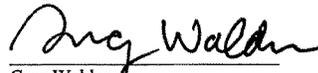
Denny Heck
Member of Congress



Greg Gianforte
Member of Congress



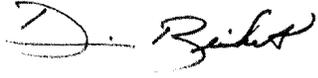
Kurt Schrader
Member of Congress



Greg Walden
Member of Congress



Suzan L. DelBene
Member of Congress

A handwritten signature in black ink, appearing to read "D. Reichert". The signature is written in a cursive style with a large initial "D" and a horizontal line extending from it.

Dave Reichert
Member of Congress



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 202.872.0030 Phone | 202.872.1331 Fax
 www.utc.org

April 12, 2018

The Honorable Fred Upton
 Chairman, House Energy and
 Commerce Committee Subcommittee
 On Energy
 2138 Rayburn House Office Building
 Washington, D.C. 20515

The Honorable Bobby Rush
 Ranking Member, House Energy and
 Commerce Committee Subcommittee
 On Energy
 2188 Rayburn House Office Building
 Washington, D.C. 20515

Re: April 12 Subcommittee on Energy Hearing on the Fiscal Year 2019 Department of Energy Budget

Dear Subcommittee Chairman Upton, Ranking Member Rush, and members of the House Energy and Commerce Committee Subcommittee on Energy:

I am writing on behalf of the Utilities Technology Council (UTC) regarding the Subcommittee on Energy's April 12, 2018, hearing on the Fiscal Year 2019 Department of Energy (DOE) Budget. Established in 1948, UTC is the global association representing energy and water providers on their needs related to deployment of reliable and resilient Information and Communications Technology (ICT) systems. Electric, natural gas, and water providers use ICT networks as the backbone for the infrastructure that delivers safe, reliable, and secure energy and water services. These networks are essential for reliability, safety, resilience, and security.

UTC applauds the Subcommittee on Energy for holding this important hearing. With Secretary of Energy Rick Perry overseeing a modernization and reorganization of the Energy Department, this is a timely discussion. As the energy and water industry's voice on ICT networks, our members are particularly interested in the Energy Department's focus on cybersecurity. In February, Secretary Perry created the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) in an effort to elevate the agency's analysis of energy infrastructure protection.

The Department of Energy also plays a key role in relation to the Electricity Subsector Coordinating Council (ESCC), a public-private partnership with the mission of coordinating efforts to prepare for national-level incidents or threats to critical infrastructure. UTC participates in ESCC discussions as an invited guest. Recent events, including last year's devastating hurricane season and the ongoing threat of cyberattacks on energy infrastructure, have demonstrated the importance of the ESCC and placed a particular spotlight on the need for resilient communications systems for utility service restoration, especially if the lights are out for an extended period.

Utilities build, maintain, and use their own communications systems (known as "private networks") for day-to-day reliability, grid modernization, and storm response. These networks were essential to bringing electricity back online in Texas and Florida and other areas hit during last year's hurricane season. As the energy and telecommunications industries converge, the ESCC has highlighted the need for cross-sector collaboration with the communications sector. Additionally, the ESCC has a working group focused on studying the communications needs of electric utilities should they have to operate the grid in a degraded





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state. They are also looking at technology that would be needed should communications be rendered inoperable by a "black sky" event.

As members of this Subcommittee focus on infrastructure issues, we encourage you to consider the need for federal dollars to be dedicated to researching and developing technologies that would ensure utilities have resilient communications systems to recover from black sky events. In addition, sector specific agencies, such as DOE and the Department of Homeland Security, as well as regulatory agencies including the Federal Energy Regulatory Commission and the Federal Communications Commission (FCC), should be encouraged to understand the cross-sector interdependencies that exist so solutions can be developed to address these interdependencies. Finally, the FCC should be required to consider the impact to grid resilience as it sets spectrum-allocation policies, such that the needs of critical infrastructure owners and operators are adequately weighted. We have also expressed these sentiments to members of the Subcommittee on Communications and Technology, which has oversight of the FCC.

UTC thanks the Subcommittee for holding this hearing. We appreciate the opportunity to submit this letter and look forward to working with all of you going forward.

Sincerely,

A handwritten signature in black ink, appearing to read "Joy Ditto", is written over a horizontal line.

Joy Ditto
President, CEO of the Utilities Technology Council



April 11, 2018

The Honorable Fred Upton
Chairman, House Energy and Commerce
Committee Subcommittee on Energy
2138 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Bobby Rush
Ranking Member, House Energy and Commerce
Committee Subcommittee on Energy
2188 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Upton and Ranking Member Rush,

We are writing to express a deep concern over FirstEnergy Solutions Corp's ("FirstEnergy") request for the Secretary of Energy to declare that an emergency condition exists in the PJM Interconnection, L.L.C. ("PJM") pursuant to Section 202(c) of the Federal Power Act.¹ Invoking 202(c) would not only abuse an emergency statute for industrial policy purposes, it would also cost customers billions with no clear benefit. Further, it would cripple the competitive market mechanism that drives long-term innovation to the benefit of millions of American families and businesses.

Indeed, FirstEnergy's request is the antithesis of economic conservatism, as it is the embodiment of bad governance and unwarranted government intervention into the marketplace. For this reason, former GOP FERC commissioner Nora Brownell has correctly referred to the request as a "real tragedy" for a capitalist society.²

PJM, its independent market monitor and other independent experts agree³ that no emergency condition exists in PJM. On the contrary, it uses a robust process to screen for reliability impacts of announced plans for generator retirements.⁴ For over a decade, PJM and the other regional transmission organizations and independent system operators have demonstrated a strong institutional commitment to ensure sufficient resources exist to maintain bulk system reliability. With respect to FirstEnergy's request, PJM has stated: "[w]e repeatedly disagree with [FirstEnergy] on the fundamental assertion that there is an emergency."⁵

The foremost expert on PJM's markets is its independent market monitor ("monitor"). The monitor has found that PJM's markets work well and bring the benefits of competition to households and businesses, but that out-of-market interventions "threaten the viability of competitive markets."⁶ The monitor stresses that PJM's markets do "not need rules to support specific technologies or power plants" but, rather, have areas for continuous improvement in PJM's market design conducted through the proper regulatory channels.⁷

¹ William S. Scherman and Rick C. Giannantonio, "Request for Emergency Order Pursuant to Federal Power Act Section 202(c)," March 29, 2018. <https://statepowerproject.files.wordpress.com/2018/03/fes-202c-application.pdf>.

² Ari Natter, "The U.S. May Not Declare a Power Grid Emergency After All," *BloombergMarkets*, April 9, 2018.

<https://www.bloomberg.com/news/articles/2018-04-09/the-u-s-may-not-declare-a-power-grid-emergency-after-all>.

³ Numerous independent experts have noted that power plant retirements in PJM and other competitive wholesale markets are an indication of natural market evolution. For example, the technical lead of the Energy Department's 2017 study on grid reliability noted that as a root cause of retirements, competition worked as intended. See these and additional comments here: <https://www.utilitydive.com/news/silverstein-if-id-written-the-doe-grid-study-recommendations/506274>.

⁴ The steps PJM takes to evaluate the reliability effects of generator deactivations are listed here:

<http://www.pjm.com/planning/services-requests/gen-deactivations.aspx>.

⁵ Kelsey Tamborrino, "All eyes on Perry after FirstEnergy move," *Politico*, March 30, 2018.

<https://www.politico.com/newsletters/morning-energy/2018/03/30/all-eyes-on-perry-after-firstenergy-move-154378>.

⁶ "State of the Market Report for PJM," Monitoring Analytics, LLC, March 9, 2017, p. 1.

http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2016/2016-som-pjm-sec1.pdf.

⁷ Devin Hartman, "The Market Advantage: A Q&A with Joe Bowring," *R Street Shorts* No. 40, June 2017, p. 2.

<http://2o9ub0417chl2lg6m43em6psi2i.wpengine.netdna-cdn.com/wp-content/uploads/2017/06/RSTREETSHORT40.pdf>.

FirstEnergy claims that emergency conditions warrant intervention to protect portions of the 65 million people within the PJM footprint.⁸ However, leading customer trade groups unequivocally oppose such misguided energy paternalism. PJM customers are deeply concerned that this action will impose billions in direct costs to them with no tangible benefit.⁹ If the Department of Energy inappropriately uses 202(c) or any other mechanism to bail out an uneconomic company in FirstEnergy, it will only serve to trap precious resources in an uncompetitive environment.

There is no grid emergency simply because the grid is in transition. Since 2011, market signals have facilitated over 20,000 megawatts of coal plant retirements in PJM as developers continue to build new, low-cost generation that drives out higher-cost plants.¹⁰ Experts at the Brattle Group note that PJM has “passed this stress test with surprising robustness and no evident threat to reliability.”¹¹ The result has been healthy reliability metrics and lower costs for millions of American families and businesses owners in the region.¹²

When economic fundamentals shift abruptly, as they have this decade, and it causes turnover in the composition of supply, markets generate substantial economic returns for producers and consumers alike. Markets provide incentives for electricity suppliers to reallocate their resources consistent with dynamic economic conditions, which is sorely lacking under the regulated-monopoly model. We stress that the observance of rapid turnover in PJM’s generation fleet indicates market success and the type of dynamism that will fuel economic growth in the future.

If Congress and the Trump administration want to act, they should remove heavy-handed regulations where the costs outweigh the benefits and those that obstruct companies from making market-driven efficiency improvements. Furthermore, Congress should eliminate subsidies such as targeted tax credits. Picking winners and losers stifles competition and innovation and misallocates labor and capital toward companies that receive preferential treatment. Layering more favoritism on top of existing favoritism only makes matters worse. Let’s end the practice.

Sincerely,

Devin Hartman
Electricity Policy Manager
R Street Institute
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Dhartman@rstreet.org

Nick Loris
Herbert and Joyce Morgan Research Fellow
Heritage Foundation
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Washington, DC 20002
202-608-6204
Nick.loris@heritage.org

⁸ Scherman and Giannantonio, 2018, p. 12 <https://statepowerproject.files.wordpress.com/2018/03/fes-202c-application.pdf>.

⁹ We have spoken with leading consumer trade groups and many individual large consumers representing major manufacturers, tech companies, retail businesses and others in the PJM footprint.

¹⁰ Hartman, 2018, pp. 1-2. <http://2o9ub0417ch2lg6m43em6psi2i.wengine.netdna-cdn.com/wp-content/uploads/2017/06/RSTREETSHORT40.pdf>.

¹¹ Johannes P. Pfeifenberger et al., “Response to U.S. Senators’ Capacity Market Questions,” The Brattle Group, May 5, 2016, p. 10. http://files.brattle.com/files/7294_brattle_open_letter_to_gao_-_response_to_u.s._senators%E2%80%99_capacity_market_questions.pdf.

¹² See reliability metrics in various annual reports by the North American Electric Reliability Corporation. See also various cost-to-load estimates from PJM and the monitor’s annual reports.

Congress of the United States
Washington, DC 20515

February 15, 2018

President Donald J. Trump
The White House
1600 Pennsylvania Ave, NW
Washington, DC 20050

Dear President Trump,

We write to urge immediate action to support clean American electricity generation in the form of nuclear power. Rapid changes in the energy sector over the last decade, most notably the discovery of large amounts of natural gas and the corresponding advancements in drilling technology, have driven down the price of electricity generation from gas-fired power plants and undercut baseload generation at nuclear power plants.

Nuclear power is abundant, reliable, inexpensive, carbon free, and relatively immune from unpredictable conditions that can disrupt the delivery of other fuels. From a national security perspective, nuclear energy is a key component of our national nuclear strategy. Premature closure of America's nuclear power plants threatens our competitive edge in this field. Without a commitment to nuclear power, nuclear technology development will decline and the Nation's technical advantage in this sector will rapidly erode. Our commercial nuclear energy industry and the United States' nuclear weapons complex complement each other to ensure our great Nation maintains the best nuclear talent and technology in the world. According to a report by the Global Nexus Initiative, if current trends continue, the U.S. will cede its lead in the nuclear power market to Russia, China, and India in the coming decades.

The Energy Futures Initiative, which is led by Former Secretary of Energy Ernest Moniz, recently released a report that stated that a commercial atomic power sector is necessary to keep uranium-processing technology away from terrorists and other bad actors. Additionally, it will support nuclear-powered Navy vessels. The U.S. needs companies and engineers that can both build and run nuclear enterprises. The U.S. Navy's reactors require supplies and qualified engineers, and American nuclear scientists fill vital national security roles, it said. According to the report, a "shrinking commercial enterprise will have long term spillover effects on the Navy supply chain, including lessened enthusiasm among American citizens to pursue nuclear technology careers."

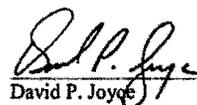
Unfortunately, recent news reports reveal that Ohio's only two nuclear power plants appear headed for premature closure. The Davis-Besse and Perry nuclear power plants in northern Ohio are important components to the regional economy and to America's energy security. These high-performing plants are economic engines that provide good-paying jobs both at the plants and through a far-reaching supply chain. These jobs support thriving communities and generate critical tax revenue that fund essential services. Northeast Ohio's Port Clinton News-Herald reported that public schools in Perry stand to lose \$2.3 million in funding if the Perry nuclear

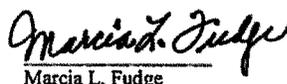
power plant closes. In addition, Ohio's two nuclear power plants produce 90 percent of the state's carbon-free electricity.

We urge you and your Administration to step in and offer immediate assistance to prevent these critical generators from closing prematurely. A robust nuclear energy enterprise is a key enabler of the Nation's nonproliferation goals and supports both the fleet modernization plans of the U.S. Navy as well as the global strategic stability and deterrence value of nuclear weapons. We ask that your Administration work with Ohio and other states with nuclear power facilities in financial distress to harmonize federal and state policies affecting the design of organized electricity markets. Specifically, we believe that these markets should appropriately value attributes including reliability, supply diversity, greenhouse gas emissions, and relative national security importance. Time is of the essence.

Sincerely,


Marcy Kaptur
Member of Congress


David P. Joyce
Member of Congress


Marcia L. Fudge
Member of Congress


Tim Ryan
Member of Congress

CC: Hon. Rick Perry, Secretary of Energy

INTERNATIONAL BROTHERHOOD OF TEAMSTERS

JAMES P. HOFFA
General President
25 Louisiana Avenue, NW
Washington, DC 20001



KEN HALL
General Secretary-Treasurer
202.624.6800
www.teamster.org

February 20, 2018

President Donald J. Trump
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Dear Mr. President:

On behalf of the 1.4 million members of the International Brotherhood of Teamsters, I urge your immediate action to secure our nation's baseload power plants and the long-term security and resilience of the electric grid. The Teamsters represent individuals employed in virtually every occupation imaginable, both professional and non-professional, private sector and public sector. Baseload coal and nuclear power plants directly employ more than 154,000 workers, produce major infrastructure projects that put Americans to work, and support a resilient and dependable electric grid.

Baseload power plants have long been the dependable work horses of the electric system, providing energy and ancillary services to customers 24 hours a day, 365 days a year. With significant on-site fuel reserves, they provide the resilience required to keep electricity flowing under all adverse circumstances. Unlike other energy resources, their operation is not subject to interruption by factors such as extreme weather events or attacks on infrastructure. Our national security, and the economic base of communities across the nation, is dependent on maintaining these plants to support a resilient supply of affordable electricity.

However, numerous baseload power plants have permanently shut down in recent years, and many more are expected to close prematurely in the very near future. Once they are gone, they are gone for good. Baseload generation is under serious threat from market-distorting subsidies and mandates, regulations that target these resources and markets that don't value resilience.

President Donald J. Trump
February 20, 2018
Page 2

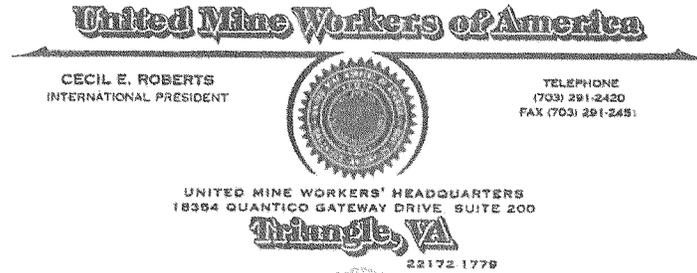
We are at a crisis point. Further decline in the number of plants will not only impact the grid and national security, it will cost valuable jobs and discourage industrial development opportunities nationwide. This is an outcome the Teamsters and America simply can't afford.

Unless corrective actions are taken, including new mechanisms that recognize baseload attributes and ensure appropriate compensation for providing the resilience and dependability benefits, the long-term viability of these baseload plants along with the jobs and community economic benefits they bring is in peril. I urge you to direct Secretary Perry to use his emergency authority to save our nation's valuable baseload power plants.

Sincerely,

A handwritten signature in black ink that reads "James P. Hoffa". The signature is written in a cursive, flowing style.

James P. Hoffa
General President
International Brotherhood of Teamsters



February 20, 2018

President Donald J. Trump
 The White House
 1600 Pennsylvania Avenue, N.W.
 Washington, DC 20500

Dear President Trump:

The imminent closure of dozens of coal-fired power plants is a crisis that needs to be addressed right away. As you know, a recent Department of Energy (DOE) proposal to correct electricity markets to properly value baseload energy sources would have prevented these closures while ensuring grid reliability and resilience. Unfortunately, the Federal Energy Regulatory Commission (FERC) rejected the proposal.

However, the Commission's inaction does not mean the problem has gone away. The plants in question will not re-open once they are offline. They will be added to the hundreds of coal-fired plants that have closed for good in recent years. The warning signs for the coming crisis have been on the horizon for years. It is no longer a far-off possibility: FERC's own projections show that 20,650 MW of coal capacity will close by 2020.

The American power grid is fueled by a diverse mix of resources, including natural gas, wind, and solar power. However, at its core, the grid relies on baseload sources like coal and nuclear power. Without these baseload sources, the grid becomes instantly vulnerable to extreme weather events, natural disasters, fuel supply chain disruptions, and terrorist attacks.

The closure of additional coal-fired plants means our grid will face a crisis scenario -- possibly very soon. Such a crisis nearly took place in 2014, when the polar vortex stretched the natural gas supply beyond its limits and communities across the country faced electricity shortages and extreme spikes in price for available fuel. The scenario would have been deadly, but baseload power resources were able to supplement natural gas pipeline constraints and provide adequate power to distressed areas.

That was four years ago. The situation is now even more dire. Coal-fired plants can store weeks' worth of fuel on-site and therefore do not have the same supply chain vulnerabilities as

other resources such as natural gas. But the availability of these stockpiled resources is diminishing by the day.

Coal mining, transportation, and related electric power generation account for more than 800,000 direct and indirect jobs, many in economically distressed regions of the nation. We cannot afford to lose these good middle-class jobs, or the coal mines and power plants that provide the bulk of community tax bases supporting essential services such as education, firefighters and police.

In addition, any more plant closings will only exacerbate the looming crisis with respect to the pensions of more than 107,000 current and future retired miners and surviving spouses. Coal industry bankruptcies over the last several years -- caused by the premature plant closings and utility fuel switching -- have eliminated more than \$100 million in annual contributions to the retirees' pension plan. Any further bankruptcies of contributing employers will cause the plan to collapse.

FERC's inaction leaves few options to stave off serious problems for our electric grid and economic disaster for hundreds of thousands of our nation's energy workers, retirees and those who live in their communities. I urge you to take the necessary steps to prevent the closure of additional coal-fired power plants.

The security and stability of our power grid is at risk, along with thousands of jobs in already hard-hit parts of our nation. Emergency action -- now -- is only way to prevent further deterioration of our country's reliable and affordable energy supply.

Sincerely,



Cecil E. Roberts

cc: Rick Perry, Secretary of Energy
Levi Allen, International Secretary-Treasurer
International Executive Board
Regional Directors
Department Heads

International Brotherhood of
BOILERMAKERS • IRON SHIP BUILDERS

753 State Avenue

NEWTON E. JONES
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BLACKSMITHS • FORGERS & HELPERS

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WILLIAM T. CREEDEN
 INTERNATIONAL SECRETARY-TREASURER
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February 21, 2018

President Donald J. Trump
 The White House
 1600 Pennsylvania Avenue, NW
 Washington, DC 20050

Dear President Trump,

On behalf of the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (Boilermakers), I write to urge action by your administration, through the Department of Energy (DOE), to use emergency powers to avoid the imminent closure of critical coal and nuclear power plants. Hundreds of coal-fueled generating plants have closed over the past several years due to lower natural gas prices and stringent EPA regulations. Some nuclear units are at risk because they cannot recover their costs under current electricity market rules, leaving some states struggling to ensure their economic viability.

Recently, the Federal Energy Regulatory Commission (FERC) rejected a proposed rule by DOE to provide full cost recovery for coal and nuclear units operating in competitive power markets. This rule would have helped to ensure fuel diversity and resilience of the electric power grid by correcting competitive electricity markets in the way that power producers are compensated. DOE's proposed rule recognized that baseload coal and nuclear plants provide unique benefits to the electric grid due to the security of their "on the ground" fuel supplies and their inherent stability and reliability.

Unfortunately, the lack of action by FERC has now left too many of these coal and nuclear power plants vulnerable to imminent retirement. These plant closures will certainly result in further strain on the electric grid and reliability - not to mention the detrimental effects on the communities that these plants support through a strong tax base and steady employment, including thousands of highly-skilled Boilermakers who construct and maintain these coal and nuclear units.

Too many baseload power plants have already closed in recent years. The premature retirement of many more due to outdated market rules will further undermine electric reliability, affecting consumers, manufacturing industries, and high-tech businesses. Once these baseload power plants close, they do not reopen.

FERC's refusal to address this problem as proposed by DOE has left few alternatives and, in our view, requires immediate, corrective action by DOE.

I urge you to direct DOE Secretary Perry to use his emergency authority to intervene in this serious situation to prevent the further closure of coal and nuclear baseload generators.

Sincerely,

A handwritten signature in black ink, appearing to read "Newton B. Jones", with a long horizontal flourish extending to the right.

Newton B. Jones
International President

cc: Hon. Rick Perry, Secretary, Department of Energy
U.S. International Vice Presidents

UTILITY WORKERS UNION OF AMERICA

D. MICHAEL LANGFORD
PRESIDENT

STEVEN VANSLOOTEN
EXECUTIVE VICE PRESIDENT

MICHAEL COLEMAN
SECRETARY-TREASURER

JOHN DUFFY
VICE PRESIDENT

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February 20, 2018

President Donald J. Trump
The White House
1600 Pennsylvania Ave, NW
Washington, DC 20050

Dear President Trump,

The hard-working men and woman who work in our nation's power plants need your help – and they need your help now. Last month, the Federal Energy Regulatory Commission (FERC) rejected a proposed rule by the Department of Energy (DOE) that would have corrected competitive electricity markets to appropriately value attributes uniquely provided by fuel-secure baseload generators - predominantly critical coal and nuclear power plants. FERC's failure to timely address the pressing need to fix America's electricity markets will have devastating consequences for our economy, our power grid, and our national security.

Most alarmingly, power plant closures will be immediate and irreversible. Largely because of punitive regulatory pressures against coal and nuclear power, approximately 60,000 megawatts of fuel-secure baseload power plants have closed over the last several years and many more are slated for premature closure in the near future. Unfortunately, the improved regulatory environment will not stop those closures from happening. Electricity market rules simply do not value the reliability and resiliency attributes that fuel-secure baseload generators provide the grid.

The imminent closure of these plants will have far-reaching effects. First and foremost, the nation's power grid needs fuel-secure baseload power. Coal and nuclear fuel are abundant, reliable, affordable and not vulnerable and unpredictable conditions or emergencies that can disrupt the delivery of other fuels. Coal-fired power plants can stockpile several weeks' or months' worth of fuel on site; nuclear generators store enough fuel to last months or even years.

In the case of an extreme weather emergency, a coordinated attack or any significant disruptions to the fuel delivery infrastructure, fuel-secure baseload generators are the only ones capable of continuing operations. If fuel-secure baseload plants continue to be forced to retire, our power grid is likely to become overloaded or fail in the event of a sudden, extreme increase in demand.

This is not merely a hypothetical situation: the 2014 polar vortex stretched the country's natural gas pipeline system well past its capabilities, resulting in skyrocketing prices and fuel shortages. These shortages during extreme cold temperatures could have been deadly, if not for fuel-secure baseload power plants that essentially carried the grid through the extended emergency. Many of the generators that were running full- out have since retired.

Experts agree. The North American Electric Reliability Corporation (NERC), which is responsible for establishing reliability standards for our grid, described the tenuous situation well in comments it provided to Secretary Perry's proposal. NERC said "Coal and nuclear generation generally have the unique attributes of low outage rates, high availability rates, and, with on-site storage, low fuel supply sensitivity necessary to provide secure and stable capacity to the grid. While their current benefits and potential are significant, non-synchronous

generation and natural gas-fired facilities do not currently replace the secure capacity provided by coal and nuclear generation.”

FERC’s failure to approve the DOE proposal to properly value the reliability and resiliency attributes uniquely provided by fuel-secure baseload generators could soon prove to be a catastrophic mistake. We do not have the luxury of kicking the can any farther down the road. Without immediate action to stop the imminent closure of fuel-secure baseload generators, our country will find itself confronted with a crisis that could have been prevented. This is not a question of if, but when.

I urge the White House to direct DOE Secretary Rick Perry to use the emergency powers under his authority to stop the coming closures of additional coal and nuclear plants across the country. This is the only way to prevent the impending disaster. The country cannot afford further delays. DOE must act right away.

A handwritten signature in black ink that reads "D. Mike Langford". The signature is written in a cursive, slightly slanted style.

Sincerely,
D. Michael Langford
National President
Utility Workers Union of America, AFL-CIO

CC: Hon. Rick Perry, Secretary of Energy

US Department of Energy

MAR 30 2018

March 30, 2018

Electricity Delivery and
Energy ReliabilityVIA COURIER

The Honorable James Richard Perry
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

Re: Joint Request of the Energy Industry Trade Associations for Notice-and-Comment Procedures Regarding the March 29, 2018 Request of First Energy Solutions for an Emergency Order Pursuant to Section 202(c) of the Federal Power Act

Dear Secretary Perry:

The Advanced Energy Economy, the American Council on Renewable Energy, the American Forest & Paper Association, the American Petroleum Institute, the American Wind Energy Association, the Electric Power Supply Association, the Electricity Consumers Resource Council, the Independent Petroleum Association of America, the Interstate Natural Gas Association of America, the Natural Gas Supply Association, and the Solar Energy Industries Association (collectively, "Joint Industry Commenters") hereby respectfully submit this joint request that the Secretary of Energy establish notice-and-comment procedures with respect to the March 29, 2018 request (the "March 29 Request") of FirstEnergy Solutions ("FE Solutions") for issuance of an order pursuant to Section 202(c) of the Federal Power Act (the "FPA").¹ In the March 29 Request, FE Solutions asks the Secretary to require PJM Interconnection, L.L.C. ("PJM") to pay certain nuclear-powered and coal-fired generators "cost-based rates that provide for full cost recovery . . ."² As was well-documented in the recent proceeding before the Federal Energy Regulatory Commission ("FERC") initiated by the Secretary's October 10, 2017 proposed rulemaking on grid resilience pricing,³ such action would have far reaching implications for the PJM markets and for a broad spectrum of parties, including those represented by the Joint Industry Commenters. It is, therefore, imperative that all stakeholders be afforded notice, and a meaningful opportunity to be heard, before any favorable action is taken on the March 29 Request.⁴

¹ 16 U.S.C. § 824a(c) (2017).

² March 29 Request at 31.

³ See *Grid Resilience Pricing Rule*, Notice of Proposed Rulemaking, 82 Fed. Reg. 46,940 (Oct. 10, 2017) (the "October 10 NOPR").

⁴ Naturally, the Joint Industry Commenters would not object to the Secretary's rejection of the March 29 Request without notice and comment.

The Honorable James Richard Perry
March 30, 2018
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The purported problem prompting the March 29 Request is the same one that was the subject of the Secretary's October 10 NOPR.⁵ On January 8, 2018, FERC issued an order terminating that rulemaking and initiating a separate proceeding in order "to examine holistically the resilience of the bulk power system."⁶ FERC held that none of the participants in the rulemaking, including FE Solutions, which filed extensive comments, had demonstrated that existing tariffs were unjust and unreasonable or that the proposed cost-based rates for select generators were just and reasonable.⁷ FERC also relied on "extensive comments" from PJM and other system operators which identified no "past or planned generator retirements that may be a threat to grid resilience."⁸ By its March 29 Request, FE Solutions is asking the Secretary to second-guess FERC's expert findings on a record substantially less developed than that in the FERC proceeding. This is particularly problematic where the proposed remedy is concerned, because Section 202(c) of the FPA unambiguously requires that any compensation required by the Secretary be "just and reasonable."⁹ FE Solutions is also asking the Secretary to disregard the Department of Energy's own regulations, which clearly state that "economic factors relating to service . . . generally will not be considered as emergencies unless the inability to supply electric service is imminent."¹⁰ As recognized in the FERC proceeding and as discussed below, there is no imminent threat.

Even leaving aside the merits and assuming *arguendo* that the March 29 Request identifies a valid problem, FE Solutions's own conduct in response to the Commission's January 8 Order belies claims that there is any *immediate* problem requiring issuance of an order before affected parties have a meaningful opportunity to be heard. Specifically, FE Solutions did not avail itself of the opportunity to request rehearing of the January 8 Order within the 30 days prescribed by the FPA¹¹ and waited nearly three months to file the March 29 Request. It would be manifestly unreasonable and unfair to both other interested parties and the Secretary for FE Solutions to demand that the Secretary act without hearing from interested parties, including PJM, after having failed to exercise its right to request rehearing before FERC and waited nearly three months before challenging FERC's order through the March 29 Request to the Secretary.

It is also telling that the most immediate considerations underlying FE Solutions's March 29 Request are that FE Solutions: (1) "likely will file for bankruptcy by the end of March 2018"; and (2) has "already submitted notice to PJM that it would deactivate its nuclear

⁵ See *Grid Resilience Pricing Rule*, Notice of Proposed Rulemaking, 82 Fed. Reg. 46,940 (Oct. 10, 2017).

⁶ *Grid Reliability & Resilience Pricing*, 162 FERC ¶ 61,012 at P 1 (2018) (the "January 8 Order").

⁷ See *id.* at PP 14-16.

⁸ *Id.* at P 15.

⁹ 16 U.S.C. § 824a(c) (2012).

¹⁰ 10 C.F.R. § 205.371 (2017).

¹¹ See 16 U.S.C. § 825(a) (2012).

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assets . . . in 2020 and 2021.”¹² Notwithstanding FE Solutions’s assertions to the contrary, these considerations both underscore the lack of urgency in this case. First, the near-term effect of a bankruptcy filing will be to decrease, not increase, the financial pressures on FE Solutions inasmuch as actions to collect pre-petition debts will be stayed, giving it a “breathing spell” while it reorganizes.¹³ While the bankruptcy filing may be an unwelcome event for FE Solutions and its stakeholders, that event only serves to lessen the immediacy of any alleged problem facing society arising from threatened retirements of its facilities. Second, threatened retirements that will not occur until 2020 and 2021 can hardly be said to present an issue so immediate as to justify denying affected parties the opportunity to comment and depriving the Secretary of the benefit of those parties’ input.¹⁴

For the foregoing reasons, the Joint Industry Commenters respectfully request that the Secretary establish notice-and-comment procedures before taking any favorable action on the March 29 Request. Specifically, the Secretary should provide for publication of a notice of the March 29 Request in the *Federal Register* and establish a comment period of at least 60 days. Such a comment period would be consistent with the requirements of Executive Order 12866, which states that “each agency should afford the public a meaningful opportunity to comment on any proposed regulation, which in most cases should include a comment period of not less than 60 days.”¹⁵

Thank you for your consideration of this matter.

Very truly yours,

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¹² See March 29 Request at 8 (footnote omitted).

¹³ *In re Robinson*, 764 F.3d 554, 559 (6th Cir. 2014) (quoting H.R.Rep. No. 95–595, at 340 (1978), 1978 U.S.C.C.A.N. 5963, 6297).

¹⁴ FE Solutions also fails to acknowledge that those retirements cannot occur until PJM reviews their potential reliability impacts, and that, to the extent reliability impacts are identified, PJM has authority to take steps to address them.

¹⁵ *Regulatory Planning and Review*, Exec. Order No. 12866, 58 Fed. Reg. 51,735, 1993 WL 13149641, § 6 (Sept. 30, 1993).

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cc: Bruce J. Walker, Assistant Secretary, DOE Office of Electric
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Patricia A. Hoffman, Principal Deputy Assistant Secretary,
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The Honorable Kevin J. McIntyre, Chairman, FERC
The Honorable Cheryl A. LaFleur, Commissioner, FERC
The Honorable Neil Chatterjee, Commissioner, FERC
The Honorable Robert F. Powelson, Commissioner, FERC
The Honorable Richard Glick, Commissioner, FERC
The Honorable Kimberly D. Bose, Secretary, FERC



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
400 NORTH STREET, HARRISBURG, PA 17120

April 10, 2018

Via Overnight and Electronic Mail

The Honorable Rick Perry
Secretary of Energy
U.S. Department of Energy
1000 Independence Ave. S.W.
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Mr. Bruce Walker
Assistant Secretary
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Re: Motion to Intervene and Protest of Pennsylvania Public Utility Commission

Dear: Secretary Perry, Assistant Secretary Walker and Deputy Assistant Secretary
Jereza:

The Pennsylvania Public Utility Commission (PAPUC), by and through its
undersigned counsel, files this Motion to Intervene and Protest in the proceeding
involving the March 29, 2018 Request for Emergency Order Pursuant to Federal Power
Act Section 202(c) by FirstEnergy Solutions Corp. (FES).

I. PROCEDURAL BACKGROUND

On March 29, 2018, FES sent a letter (Request) to U.S. Department of Energy (Department) Secretary James Richard Perry, formally requesting that Secretary Perry invoke his emergency authority under Federal Power Act (FPA) Section 202(c),¹ to find that an emergency condition exists in the PJM Interconnection (PJM) territory that requires immediate intervention. In the Request, FES seeks relief under Section 202(c), whereby the Secretary would order “certain existing nuclear and coal-fired generators” to contract with PJM for energy, capacity, and ancillary services to “maintain the stability of the electric grid.”² Further, FES requests that Secretary Perry order PJM to “promptly compensate at-risk merchant nuclear and coal-fired power plants for the full benefits they provide.”³ FES served the Request on numerous affected parties.

II. MOTION TO INTERVENE

The PAPUC is the agency charged with the responsibility for regulating electric utility rates and service within the Commonwealth of Pennsylvania, pursuant to the Public Utility Code.⁴ In this role, the PAPUC has authority to represent the interests of Pennsylvania electric consumers in proceedings before federal courts, the Federal Energy Regulatory Commission (FERC) and other federal agencies including the Department.

¹ 16 U.S.C.S. § 824a (c).

² FES Letter at 1.

³ *Id.* at 1.

⁴ 66 Pa. C.S. § 101 *et seq.*

Pennsylvania is centrally located within the Mid-Atlantic Region of the United States and possesses significant amounts of fossil fuel generation, as well as renewable generation. Pennsylvania is a major consumer of electricity with its industrial, commercial, and residential load and is one of the country's largest producers of natural gas, primarily from the Marcellus Shale formation. Growing development of this fuel source has made natural gas plentiful and economically attractive. This, in turn, has greatly accelerated a shift away from coal-fired generation toward gas-fired electric generation, along with construction of gas-fired electric generation, including combustion turbines.

The PAPUC has a vested interest in ensuring that adequate generation exists to meet the current and future needs of its residents and the region. In this regard, the PAPUC has been an active supporter of electric wholesale capacity markets and the initiatives advanced by the FERC and PJM, the regional transmission organization, to incentivize the continued development of new generation in the Mid-Atlantic region. Moreover, the PAPUC has a significant and direct interest in this proceeding that is not adequately represented by other parties.

If FES' Request is granted, prospective payments made pursuant to an Emergency Order would almost certainly be recovered from consumers throughout the PJM region, including millions of ratepayers in the Commonwealth of Pennsylvania. The PAPUC opposes the Request because, contrary to the assertions made therein, no foreseeable reliability risk exists. We reserve the right to supplement this preliminary pleading to

explain, in detail, what effect the Request would have on Pennsylvania's ratepayers and competitive market.

III. PROTEST

The PAPUC protests FES' Request as legally and factually insufficient under Section 202 (c), and further, contends that the damage to electric wholesale markets and, by extension, retail customers far outweighs the speculative benefits advocated by FES.

In support of its Protest, the PAPUC avers as follows:

- The overwhelming evidence presented in letters filed by numerous parties to this proceeding demonstrates that no "emergency condition" exists to justify the extraordinary provisions of Section 202(c) of the FPA. Additionally, the allegations are altogether too remote to be actionable. FES' nuclear units are not scheduled for deactivation until May 31, 2020, for one unit, and May 31, 2021, for 3 other units at two plant sites. Wholesale market prices and market structures in future years may depart substantially from current market prices and structures. In the absence of credible evidence, FES' Request fails as legally and factually adequate to justify the relief it requests.
- FES' Emergency Order Request seeks unprecedented and overbroad relief. FES threatens the efficient functioning of organized competitive wholesale electricity markets by providing *de facto* cost of service treatment to coal and nuclear generation without adequate justification.
- Reliability is not at credible risk, as PJM's recent filings demonstrate. Moreover, if reliability concerns do arise, PJM has adequate processes for addressing those concerns.⁵
- Resilience and reliability are complex topics that are currently being examined within the PJM stakeholder process. These processes should be permitted to go forward, rather than coopting these

⁵ Reliability Must Run (RMR) protocol in PJM Manual 14D, pursuant to which PJM may request a unit to operate past its desired deactivation date.

processes through the Department's action vis a vis Section 202(c). PJM has an ongoing stakeholder process to address market design improvements, and is currently examining several energy, capacity, and ancillary market reforms, in addition to grid resiliency⁶ issues. FES should not be permitted, through this Request, to circumvent the thorough stakeholder process currently established in PJM to elevate their self-serving interests over those of other competitive suppliers, technologies, utilities and end-use customers.

- If granted, the Request may unnecessarily raise energy costs for consumers and directly undercut the tremendous economic advantage to the United States from abundant natural gas deposits.
- FES, through its Request, is seeking to insert itself into matters of state jurisdiction as it relates to resource adequacy, resource selection criteria and state energy policy. These are matters established by the Governor and the Pennsylvania General Assembly,⁷ as implemented through the PAPUC, and other departments within the Commonwealth of Pennsylvania.

The PAPUC respectfully urges the Department to give all interested parties sufficient time to present their responses to the FES Request before the Department rules on the Request. The PAPUC supports and concurs in the Trade Group request, filed March 30, 2018, seeking a 60-day comment period.

IV. SERVICE OF DOCUMENTS

The PAPUC designates the following persons to receive service and communications on its behalf in this proceeding:

⁶ *Grid Resilience in Regional Transmission Organizations and Independent System Operators*, Docket No. AD18-7-000, Order issued January 8, 2018.

⁷ 66 Pa.C.S. §§2801 *et seq.* and §§2201 *et seq.*

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V. CONCLUSION

For the foregoing reasons, the PAPUC respectfully requests that the Department grant the PAPUC's Motion to Intervene, accept its Protest, provide all interested parties 60 days to file comments on the Request and reject FES' Request for relief under Section 202 (c) of the FPA.

Respectfully submitted,

/s/ James A. Mullins
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Dated: April 10, 2018



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March 30, 2018

The Honorable James Richard Perry
Secretary of Energy
United States Department of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

Re: FirstEnergy Solutions' Request for Emergency Relief under Section 202 of the Federal Power Act

Dear Secretary Perry:

PJM Interconnection, LLC (PJM) respectfully seeks to submit this response to the above-referenced request filed by FirstEnergy Solutions and affiliates (FES) on March 29, 2018. While the PJM system presently is reliable by all measures, PJM will refrain, at this time, from responding to FES' assertion that an "emergency condition" will arise should certain FES nuclear plants and potentially certain FES coal plants retire in upcoming years as announced or threatened by the company.¹

PJM will not use this opportunity to express agreement or disagreement with several major points of argument advanced by FES; nor will we correct at this time several misstated facts presented by FES. Instead, PJM simply points out to the Secretary two very obvious and objective facts that relieve the Department from the need to take precipitous, immediate action to address FES' request.

First, whether FES' actions create a reliability concern that may threaten the stable and reliable operation of the grid, much less constitute an emergency within the meaning of Section 202(c) of the Federal Power Act, is a question that will be answered by a proscribed, detailed and regularly employed process found in Part V of the PJM Tariff. Consistent with the PJM Tariff, over the next 30 days, PJM will undertake a thorough analysis of its system to determine whether the announced retirements would present systemic adequacy issues or any local reliability issues, such as insufficient voltage support. Should any such finding result, the PJM Tariff provides an additional 60 days to work with FES and a range of tools available, including ordering transmission system upgrades and, if necessary, offering full cost of service compensation under Part V of the PJM Tariff to induce assets to remain temporarily on-line. Ultimately, PJM could also join FES in its instant request should other remedial options prove insufficient.

Second, PJM can state without reservation there is no immediate threat to system reliability. Indeed, the FES units that announced their expected retirement earlier this week, by their own disclosures, will remain operational in most cases until through May 2021. Moreover, these announcements are not binding – FES

¹ Curiously, the request purports to seek relief for the entire FES merchant fleet - and somehow on behalf of others - relief for *all* other coal and nuclear units in PJM, totaling over 80 generation units. PJM will evaluate the question of impaired reliability or an "emergency condition" based on actual facts – announced retirements – not on the company's general dissatisfaction with the PJM markets or its competitive position therein. Nor will PJM evaluate the impact of closure of other companies' plants unless or until owners of such plants raise the matter with PJM.

{W0153751.1}

can elect to rescind this notice, or should assets be sold, a subsequent purchaser likewise may decide to continue to operate the units. But even assuming these units do in fact close as of the dates announced, PJM, FERC, and the Department of Energy will have ample time before then to take measures, which at the extreme might include the kind of relief sought in the instant request.

PJM therefore respectfully requests that the Secretary allow PJM's FERC-accepted process to unfold in an orderly manner and refrain from taking unnecessary, extraordinary and precedential immediate action as sought by FES. PJM will commit to sharing publicly (to the maximum extent possible), and in any event to the Department of Energy, our findings resulting from our 30-day process for evaluating the system implications of FES' announced retirements.

Thank you for considering PJM's perspective and suggestions.

Sincerely,



Vincent P. Duane

cc: Mark Menezes, DOE
Bruce Walker, DOE
Sean Cunningham, DOE
Patricia Hoffman, DOE
Catherine Jereza, DOE

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April 11, 2018

The Honorable Greg Walden
 Chairman
 Committee on Energy and Commerce
 2123 Rayburn House Office Building
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Dear Mr. Chairman:

Our nation's nuclear power plants deliver benefits that go far beyond a reliable and resilient electrical grid. Nuclear energy contributes to a strong economy, a cleaner environment, and national security. Yet today we are at risk of losing much of what nuclear energy delivers.

FirstEnergy Solutions has announced plans to shut down several electricity generation facilities, including four nuclear reactors at three sites – two reactors each in Ohio and Pennsylvania.¹ These four reactors join eight others that have already announced plans to shut down, and another six that have permanently closed over the past five years. The announcement of these additional nuclear retirements is further proof that the industry has reached an inflection point in the debate over market reforms to recognize the value of the nation's largest and most resilient source of emissions-free energy. The simple fact is that nuclear energy's many benefits are not being recognized by the markets in which they operate. We are therefore writing to request that immediate action be taken to prevent the closure of these four nuclear power reactors and to more fully recognize the benefits that nuclear energy delivers to our nation.

As demonstrated by the recent announcement that Exelon's Three Mile Island reactor will prematurely shut down in September 2019², once a deactivation decision is made, the plant owner ceases investment in capital investments, including fuel. Moreover, refueling outages must be planned a year in advance. Thus, in the case of TMI and the FirstEnergy Solutions plants, without urgent action, it will be too late to reverse these decisions and allow for continued operation.

Nuclear energy accounts for nearly 20 percent of the electricity generated in the United States. And regardless of what you value in our electricity system, nuclear energy delivers. Our nation's 99 nuclear power reactors have an unmatched combination of attributes that are central to a clean, modern electrical grid, but that are under-valued or not valued at all in most electricity markets.

For example, if you value system resilience and low electricity prices, you should value that nuclear plants operate around the clock for up to two years between refuelings, providing valuable fuel security,

¹ See <https://www.fes.com/content/fes/home/restructuring.html>

² <http://www.exeloncorp.com/newsroom/exelon-to-retire-three-mile-island-generating-station-in-2019>

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The Honorable Greg Walden
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reliability and price stability to our electricity markets. Losing these and other nuclear power reactors would imperil the resilience of the grid and drive up costs to consumers. A recent Department of Energy study³ showed the PJM electricity system was heavily reliant on these and other economically challenged plants to provide generation during the bomb cyclone event this winter. Even with these plants helping to provide power, electricity prices soared above \$200 per megawatt hour as natural gas prices spiked. Managing severe cold weather events without these nuclear plants will be costlier as the system becomes increasingly dependent on generation that depends on “just-in-time” fuel deliveries and lacks firm fuel supply capabilities.

In addition, multiple studies have made clear that when nuclear plants shut down, electricity prices rise – even under normal weather conditions. For example, the Brattle Group⁴ found that New York would save customers a billion dollars a year by acting to preserve nuclear plants. Providing financial support for nuclear power plants facing premature closure decisions will cost consumers far less than any of the alternatives.

If you value clean electricity generation, you should value nuclear energy as our nation’s single-largest source of carbon-free generation, representing nearly 60 percent of all zero-carbon electricity. In addition, nuclear energy generation emits no sulfur dioxide, nitrogen oxides, mercury, and particulate emissions. The four nuclear reactors announced for closure generated more non-emitting electricity last year than all of the wind and all of the solar produced in PJM combined. If these reactors close, carbon emissions will increase over 20 million metric tons, the equivalent of putting over 4 million additional cars on the road. It simply won’t be feasible to replace all or even most of the lost clean energy generation with renewables; the increased fossil fuel generation that would replace the lost nuclear generation would wipe out more than 25 years of progress toward a cleaner electricity system.

If you value national security and global influence, you should be concerned that the U.S. leads the world in nuclear energy generation, but has seen its civil nuclear leadership erode as Russia and China have captured an increasing share of the global market.⁵ For several decades, our strong domestic nuclear industry has helped the U.S. enforce the world’s highest standards for nuclear safety and nonproliferation. American influence is strengthened through the century-long relationships built when the U.S. engages in nuclear commerce with another nation, and other nations seek us out as commercial partners in part because we operate the safest and most efficient nuclear power plants in the world. Unfortunately, other nations will be increasingly less likely to look to the U.S. for nuclear products and services if we let our operating nuclear fleet continue to shrink.⁶

And finally, if you value well-paying, long-term jobs, you should know that losing these and other reactors would have dire consequences for the communities that host the plants. For example, closure would mean the loss of over 3,000 full-time jobs for the Ohio and Pennsylvania employees who work at the four plants, as well as thousands more jobs in the surrounding communities that are supported by their economic activity. This translates into the loss of millions of dollars in taxes and negative impacts

³ <https://www.netl.doe.gov/research/energy-analysis/search-publications/vuedetails?id=2594>

⁴ [http://files.brattle.com/system/news/pdfs/000/001/046/original/comments_on_the_new_york_dps_\(2\).pdf](http://files.brattle.com/system/news/pdfs/000/001/046/original/comments_on_the_new_york_dps_(2).pdf)

⁵ <https://static1.squarespace.com/static/58ec123cb3db2bd94e057628/59947949f43b55af66b0684b/1502902604749/EPI+nuclear+paper+17+Aug+2017.pdf>

⁶ https://osis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130719_Wallace_RestoringUSLeadershipNuclearEnergy_WEB.pdf

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to the GDP of each state. The economic hardships faced by other communities where nuclear plants have already shut down should both alarm and motivate state and national leaders to act.

The announcement by FirstEnergy Solutions demonstrates the urgency for federal policymakers to act in markets where nuclear energy is undervalued. All appropriate options should be explored to prevent the premature closure of nuclear plants and preserve the nuclear energy option. It is past time for the federal government to ensure proper valuation of nuclear energy's many attributes in electricity markets and to take other measures to preserve nuclear energy for our nation's future.

As the trade association for the nation's largest source of emissions-free energy, NEI urges policymakers to pursue long-term sustainable reforms to market rules that will correct widely acknowledged flaws that unfairly disadvantage nuclear plants, without interfering with state planning processes and regions (such as MISO) where federal markets are functioning. We have advocated in prior comments to FERC for "cost-of-service compensation for nuclear generation units, at least until other market structures are put in place that appropriately value the resiliency attributes that nuclear generation units provide."⁷ Accordingly, a Section 202(c) remedy for nuclear resources that are facing premature retirement can provide a necessary bridge before longer-term reforms can be enacted. In developing longer-term reforms, federal policymakers should consider narrowly tailored action, including supportive tax policies (including expanded production tax credits and investment tax credits), inclusion of nuclear energy in federal energy procurement goals and mandates, market design changes that allow all resources to set price, and recognition of nuclear energy's non-emitting attributes consistent with recognition provided to other non-emitting resources. The policy tools discussed above have long been used to support other components of our nation's "all of the above" energy portfolio; policymakers should now do the same for nuclear energy. And when considering these policies, we encourage you to work closely with states and FERC to ensure that any federal proposal makes sense for energy producers and consumers throughout the nation.

There is still time for policymakers to act. Leaders in New York and Illinois crafted solutions that recognize the contribution the states' nuclear plants make to maintaining clean air for their citizenry. The state of Connecticut has also acted to level the playing field for all sources of clean energy, including nuclear, to support the state's electricity needs. Federal policymakers should avoid interfering with these state programs which, like renewable portfolio standards, protect a valuable state interest in protecting the environment. But while state policy actions have been essential in preserving nuclear assets, it is imperative that federal policymakers assure federal policies appropriately value nuclear energy's attributes, to ensure it continues making important contributions to America's energy, environmental, national security and economic interests.

Sincerely yours,



Maria Korsnick

⁷ <https://www.nei.org/resources/letters-filings-comments/nei-comments-ferc-grid-resiliency-rulemaking>

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April 11, 2018

The Honorable Rick Perry
 Secretary of Energy
 U.S. Department of Energy
 1000 Independence Avenue, SW
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Dear Mr. Secretary:

Our nation's nuclear power plants deliver benefits that go far beyond a reliable and resilient electrical grid. Nuclear energy contributes to a strong economy, a cleaner environment, and national security. Yet today we are at risk of losing much of what nuclear energy delivers.

FirstEnergy Solutions has announced plans to shut down several electricity generation facilities, including four nuclear reactors at three sites – two reactors each in Ohio and Pennsylvania.¹ These four reactors join eight others that have already announced plans to shut down, and another six that have permanently closed over the past five years. The announcement of these additional nuclear retirements is further proof that the industry has reached an inflection point in the debate over market reforms to recognize the value of the nation's largest and most resilient source of emissions-free energy. The simple fact is that nuclear energy's many benefits are not being recognized by the markets in which they operate. We are therefore writing to request that immediate action be taken to prevent the closure of these four nuclear power reactors and to more fully recognize the benefits that nuclear energy delivers to our nation.

As demonstrated by the recent announcement that Exelon's Three Mile Island reactor will prematurely shut down in September 2019², once a deactivation decision is made, the plant owner ceases investment in capital investments, including fuel. Moreover, refueling outages must be planned a year in advance. Thus, in the case of TMI and the FirstEnergy Solutions plants, without urgent action, it will be too late to reverse these decisions and allow for continued operation.

Nuclear energy accounts for nearly 20 percent of the electricity generated in the United States. And regardless of what you value in our electricity system, nuclear energy delivers. Our nation's 99 nuclear power reactors have an unmatched combination of attributes that are central to a clean, modern electrical grid, but that are under-valued or not valued at all in most electricity markets.

For example, if you value system resilience and low electricity prices, you should value that nuclear plants operate around the clock for up to two years between refuelings, providing valuable fuel security,

¹ See <https://www.fes.com/content/fes/home/restructuring.html>

² <http://www.exeloncorp.com/newsroom/exelon-to-retire-three-mile-island-generating-station-in-2019>

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reliability and price stability to our electricity markets. Losing these and other nuclear power reactors would imperil the resilience of the grid and drive up costs to consumers. A recent Department of Energy study³ showed the PJM electricity system was heavily reliant on these and other economically challenged plants to provide generation during the bomb cyclone event this winter. Even with these plants helping to provide power, electricity prices soared above \$200 per megawatt hour as natural gas prices spiked. Managing severe cold weather events without these nuclear plants will be costlier as the system becomes increasingly dependent on generation that depends on “just-in-time” fuel deliveries and lacks firm fuel supply capabilities.

In addition, multiple studies have made clear that when nuclear plants shut down, electricity prices rise – even under normal weather conditions. For example, the Brattle Group⁴ found that New York would save customers a billion dollars a year by acting to preserve nuclear plants. Providing financial support for nuclear power plants facing premature closure decisions will cost consumers far less than any of the alternatives.

If you value clean electricity generation, you should value nuclear energy as our nation’s single-largest source of carbon-free generation, representing nearly 60 percent of all zero-carbon electricity. In addition, nuclear energy generation emits no sulfur dioxide, nitrogen oxides, mercury, and particulate emissions. The four nuclear reactors announced for closure generated more non-emitting electricity last year than all of the wind and all of the solar produced in PJM combined. If these reactors close, carbon emissions will increase over 20 million metric tons, the equivalent of putting over 4 million additional cars on the road. It simply won’t be feasible to replace all or even most of the lost clean energy generation with renewables; the increased fossil fuel generation that would replace the lost nuclear generation would wipe out more than 25 years of progress toward a cleaner electricity system.

If you value national security and global influence, you should be concerned that the U.S. leads the world in nuclear energy generation, but has seen its civil nuclear leadership erode as Russia and China have captured an increasing share of the global market.⁵ For several decades, our strong domestic nuclear industry has helped the U.S. enforce the world’s highest standards for nuclear safety and nonproliferation. American influence is strengthened through the century-long relationships built when the U.S. engages in nuclear commerce with another nation, and other nations seek us out as commercial partners in part because we operate the safest and most efficient nuclear power plants in the world. Unfortunately, other nations will be increasingly less likely to look to the U.S. for nuclear products and services if we let our operating nuclear fleet continue to shrink.⁶

And finally, if you value well-paying, long-term jobs, you should know that losing these and other reactors would have dire consequences for the communities that host the plants. For example, closure would mean the loss of over 3,000 full-time jobs for the Ohio and Pennsylvania employees who work at the four plants, as well as thousands more jobs in the surrounding communities that are supported by their economic activity. This translates into the loss of millions of dollars in taxes and negative impacts

³ <https://www.netl.doe.gov/research/energy-analysis/search-publications/vuedetails?id=2594>

⁴ [http://files.brattle.com/system/news/pdfs/000/001/046/original/comments_on_the_new_york_dps_\(2\).pdf](http://files.brattle.com/system/news/pdfs/000/001/046/original/comments_on_the_new_york_dps_(2).pdf)

⁵ <https://static1.squarespace.com/static/58ec123cb3db2bd94e0576281/59947949f43b55a86b0684b/1502902604749/EPI+nuclear+paper+17+Aug+2017.pdf>

⁶ https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130719_Wallace_RestoringUSLeadershipNuclearEnergy_WEB.pdf

The Honorable Rick Perry
April 11, 2018
Page 3

to the GDP of each state. The economic hardships faced by other communities where nuclear plants have already shut down should both alarm and motivate state and national leaders to act.

The announcement by FirstEnergy Solutions demonstrates the urgency for federal policymakers to act in markets where nuclear energy is undervalued. All appropriate options should be explored to prevent the premature closure of nuclear plants and preserve the nuclear energy option. It is past time for the federal government to ensure proper valuation of nuclear energy's many attributes in electricity markets and to take other measures to preserve nuclear energy for our nation's future.

As the trade association for the nation's largest source of emissions-free energy, NEI urges policymakers to pursue long-term sustainable reforms to market rules that will correct widely acknowledged flaws that unfairly disadvantage nuclear plants, without interfering with state planning processes and regions (such as MISO) where federal markets are functioning. We have advocated in prior comments to FERC for "cost-of-service compensation for nuclear generation units, at least until other market structures are put in place that appropriately value the resiliency attributes that nuclear generation units provide."⁷ Accordingly, a Section 202(c) remedy for nuclear resources that are facing premature retirement can provide a necessary bridge before longer-term reforms can be enacted. In developing longer-term reforms, federal policymakers should consider narrowly tailored action, including supportive tax policies (including expanded production tax credits and investment tax credits), inclusion of nuclear energy in federal energy procurement goals and mandates, market design changes that allow all resources to set price, and recognition of nuclear energy's non-emitting attributes consistent with recognition provided to other non-emitting resources. The policy tools discussed above have long been used to support other components of our nation's "all of the above" energy portfolio; policymakers should now do the same for nuclear energy. And when considering these policies, we encourage you to work closely with states and FERC to ensure that any federal proposal makes sense for energy producers and consumers throughout the nation.

There is still time for policymakers to act. Leaders in New York and Illinois crafted solutions that recognize the contribution the states' nuclear plants make to maintaining clean air for their citizenry. The state of Connecticut has also acted to level the playing field for all sources of clean energy, including nuclear, to support the state's electricity needs. Federal policymakers should avoid interfering with these state programs which, like renewable portfolio standards, protect a valuable state interest in protecting the environment. But while state policy actions have been essential in preserving nuclear assets, it is imperative that federal policymakers assure federal policies appropriately value nuclear energy's attributes, to ensure it continues making important contributions to America's energy, environmental, national security and economic interests.

Sincerely yours,



Maria Korsnick

⁷ <https://www.nei.org/resources/letters-filings-comments/nei-comments-ferc-grid-resiliency-rulemaking>

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
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June 14, 2018

The Honorable Rick Perry
Secretary
U.S. Department of Energy
1000 Independence Avenue, S.W.
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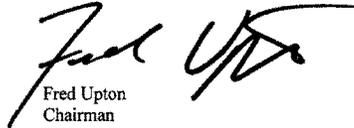
Dear Secretary Perry:

Thank you for appearing before the Subcommittee on Energy on Thursday, April 12, 2018, to testify at the hearing entitled "The Fiscal Year 2019 Department of Energy Budget."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. Also attached are Member requests made during the hearing. To facilitate the printing of the hearing record, please respond to these questions and requests with a transmittal letter by the close of business on Thursday, June 28, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to Kelly.Collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,



Fred Upton
Chairman
Subcommittee on Energy

cc: The Honorable Bobby L. Rush, Ranking Member, Subcommittee on Energy

Attachments

Attachment 1—Additional Questions for the Record**The Honorable Fred Upton**

1. In the DOE's FY 2019 Request you are seeking funding for a new office known as the "Office of Cybersecurity, Energy, Security, and Emergency Response". Earlier this year, this Committee held a hearing where we discussed the role and responsibilities of this new office.
 - a. Will you elaborate more on how this office will help enhance the resilience and security of U.S. energy infrastructure?
2. The DOE FY 2019 budget request includes \$2.1 billion for applied energy programs focusing on early-stage research and development taking place at the national labs.
 - a. What is the DOE doing to make sure that the technologies developed and knowledge gained by our national labs is being transferred to the private sector for implementation?
3. The FY18 Omnibus included language directing the Department to put together a plan to demonstrate multiple reactor designs over the next decade. A strong focus on fully backed by the Department's resources are important to making American advanced nuclear a reality.
 - a. As you develop this long-term strategy, how can the Department work collaboratively with industry to ensure promising new reactor designs come to the commercial market?
4. What is the Administration's plan to assure nuclear material needs for advanced reactor designs will be aligned with the expected need? For example, is the Department considering reestablishing a U.S.-owned enrichment capability and, if so, how does the Department plan to financially support this capability?
5. Secretary Perry, as the former governor of Texas, I'm confident you understand the need to manage limited budgetary resources in the most efficient manner. One DOE problem that is persistently identified by external reviewers and stakeholders is the micromanagement of DOE's funding. The resulting atomization of DOE funding consequently requires "spending more money to manage money."
6. In March, DOE's National Energy Technology Laboratory (NETL) released a study finding that the continued retirement of fossil fuel power plants could have an adverse impact on the nation's ability to meet power generation needs during severe weather events, such as the "bomb cyclone" we experienced earlier this year.

- a. Are you concerned that we are overestimating the nation's ability to respond to weather events if the current pace of coal and nuclear plant retirements continues? Are the needs more pressing in some regions than others?
- 7. Parts of the United States participate in competitive wholesale energy markets, where energy generation resources offer bids to supply electricity to meet consumer demand. However, in some wholesale energy markets, certain generation resources such as coal and nuclear are struggling to recover costs – which is resulting in early retirements of power plants.
 - a. Can wholesale energy markets do a better job at setting energy prices?
 - b. What are the benefits of a diverse generation mix?
- 8. In 2014 FERC began to examine the issue of how non-market actions, events, and circumstances can influence wholesale electricity prices. Since then, FERC has initiated numerous “price formation” rulemakings on various topics. Several years have now passed and some have said that FERC is addressing “price formation” issues too slowly.
 - a. Should FERC be expediting these proceedings in light of recent announcements of plant closures?
- 9. The Department's August 2017 “Staff Report on Electricity Markets and Reliability” acknowledges, cost-competitive energy storage “will be critical” to balance the grid under high levels of variable renewable energy. New low cost systems are currently being pioneered at the national labs, but are not yet commercially viable.
 - a. Historically, the Department's research programs have had the greatest impact when resources are focused on very clear, specific goals.
 - b. Given the Department's focus on “doing more with less,” would setting this type of technology goal ensure scant federal dollars are being efficiently utilized to meet goals important for U.S. innovation leadership?
- 10. It is my understanding that current research on energy storage technology is more focused on transportation-uses, is that correct?
 - a. If so, how can we bolster efforts to improve innovative grid-scale energy storage technologies?
- 11. The Administration's FY19 budget proposal largely moves away from the research and development of carbon capture, reducing its R&D roughly 75 percent relative to FY18.
 - a. Given the fossil energy R&D request as a whole was increased relative to the President's request in FY18, can you explain the Department shift from carbon capture R&D?

- b. Given Congress' efforts on the 45Q tax credit, shouldn't R&D be focused more on bringing carbon capture, utilization, and storage (CCUS) technologies to the commercial market?

The Honorable Pete Olson

1. Mr. Secretary, have you seen any trends in “predatory investment” in the United States by companies (with the backing of a state-level actor) in greenfield projects in the energy, chemical, defense or technology sectors? Is this a matter the Department of Energy is actively following?
2. Do you believe the U. S. government process for vetting sensitive foreign acquisitions of assets in the U.S. under CFIUS should include greenfield investments?

The Honorable H. Morgan Griffith

1. The Consolidated Appropriations Act of 2018 included language in Section 431 Policies Relating to Biomass Energy that directed the Secretary of Energy, Secretary of Agriculture and the Administrator of the Environmental Protection Agency to establish clear and simple policies that reflect the carbon-neutrality of forest bioenergy and recognize biomass as a renewable energy source provided the use of forest biomass does not cause the conversion of forests to non-forest use.

Please update the committee of the Agency’s progress on this Congressional directive.

The Honorable Bill Flores

1. As the administration conducts a wide-range review of nuclear policy, what are the most important policies Congress should consider and advance now, in the near term?
2. Please provide some examples of targeted DOE policy and programmatic changes to address first-mover challenges with nuclear innovators.
3. It is my understanding that steps have been taken to improve DOE’s review of LNG export applications to clear the backlog inherited from the prior administration. I also understand that FERC is facing staffing challenges to clear their own backlog. Is the DOE taking any steps to help FERC in this issue?

The Honorable Bobby L. Rush

1. What is the plan for moving forward with the Minorities in Energy Initiative, which was designed to increase minority participation within the agency, as well as within the broader energy sector?
 - a. What are the level of resources devoted to this initiative, including funding and personnel?
 - b. What are the programs currently being funded within the Minorities in Energy Initiative and what are the levels of funding for each of these programs?
 - c. What are the objectives of this initiative and how will those objectives be measured?
 - d. What is the timeline for reaching those objectives?
2. What are the plans for the Office of Economic Impact and Diversity moving forward?
 - a. What are level of resources devoted to this department, including funding and personnel?
 - b. Who is leading the OIED department and what is their background working on issues of diversity and inclusion?
 - c. What are the objectives of this department and how will those objectives be measured?
 - d. What is the timeline for reaching those objectives?
3. What is the percentage or number of minorities in decision-making and leadership positions within the Secretary's office?
4. What is the percentage or number of minorities on the Institutional Review Board?
 - a. How many members make up the Institutional Review Board in total?
 - b. How many members of the Institutional Review Board are African American?
 - c. How many members of the Institutional Review Board are Latino?
 - d. How many members of the Institutional Review Board are women?
5. What is the percentage or number of minorities on the Secretary of Energy Advisory Board?
 - a. How many members make up the Secretary of Energy Advisory Board in total?

- b. How many members of the Secretary of Energy Advisory Board are African American?
 - c. How many members of the Secretary of Energy Advisory Board are Latino?
 - d. How many members of the Secretary of Energy Advisory Board are women?
6. What is the percentage or number of minorities that make up the Senior Executive Service?
 - a. How many members of the Senior Executive Service are there in total?
 - b. How many members of the Senior Executive Service are African American?
 - c. How many members of the Senior Executive Service are Latino?
 - d. How many members of the Senior Executive Service are women?
7. How much money, in total dollars, does the Office of Science dole out in the form of research grants, scholarships, and other funding to schools and universities?
8. What are the list of schools and universities that has received funding over the past 10 years from your department, as well as the amounts distributed to each institution?
9. What is the percentage of funding that has gone to Minority Serving Institutions including Historically Black Colleges and Universities and Hispanic Serving Institutions over the past 10 years?
10. How many minority directors are there of the 17 national labs?
 - a. How many African American directors are there of the 17 national labs?
 - b. How many Latino directors are there of the 17 national labs?
 - c. How many women directors are there of the 17 national labs?
11. What is the approximate dollar amount of contracts that the 17 national labs dole out to private companies and vendors?
12. Is there a goal or objective to include a percentage of minority contractors and vendors for all of the lab contracts?
13. What percentage of these national lab contracts are given out to minority contractors and vendors?

14. Is there a plan in place to increase minority participation for contracting and vending opportunities with the national labs?
 - a. Please specify what that plan entails.
 - b. What resources, in funding and personnel, will be devoted to carrying out the plan to increase minority participation for contracting and vending opportunities with the national labs?
 - c. What is the timeline for reaching these objectives?

The Honorable Paul Tonko

1. Last year, GAO informed Congress that the Administration had committed an illegal impoundment of funding for ARPA-E in FY2017. In the FY2018 omnibus appropriations bill, Congress rejected the Administration's request to eliminate ARPA-E. In fact, Congress actually increased funding.
 - a. Now that Congress had made its support for the program clear, do you commit to fund projects through the ARPA-E program for FY2018, as intended by Congress and required by the law?
2. Similar to ARPA-E, in the FY2018 omnibus appropriations bill, Congress rejected the Administration's proposal to eliminate the Weatherization Assistance Program (WAP), and increased funding for the program. On-time delivery of weatherization funds to States is crucial to providers on the ground. Most States expect this funding on July 1st.
 - a. Will you ensure that Weatherization State grantees will receive WAP funds in a timely manner this year?
3. Earlier this year, DOE announced the creation of the Office of Cybersecurity, Energy Security, and Emergency Response. I am not necessarily opposed to this reorganization, but I would like to understand how it might affect DOE functions in the future, including the existing programs that will remain within the Office of Electricity (OE).
 - a. What will be the split of current Office of Electricity staff (full-time equivalents) going to each of the two offices?
 - b. Cybersecurity is an important issue that deserves to be elevated, but it should not be done at the expense of other critical programs. Are you committed to ensuring that there are sufficient resources and personnel for Office of Electricity programs, such as grid modernization, microgrids, and energy storage, which are also essential for improving grid reliability?

- c. What was the justification for any proposed FY2019 cuts to these non-cyber OE programs?
- 4. In January 2017, DOE released the "Energy Innovation Portfolio Plan FY2018-FY2022" report.
 - a. Does this report still reflect the research priorities and plan of the agency?

The Honorable David Loeb sack

Secretary Perry, as I indicated to you at the hearing. There needs to be much more transparency and public accountability in the Renewable Fuel Standard (RFS) program with respect to the small refinery waiver exemptions. The Department of Energy (DOE) is required under the provisions of the Clean Air Act to evaluate the applications for a waiver and provide a recommendation to the Administrator of the Environmental Protection Agency (EPA) on whether to grant the waiver or not. Please provide responses to the following questions regarding DOE's role in evaluating the applications for waivers from the 2016 and 2017 obligations under the RFS.

1. What is the total number of refinery waiver applications that DOE evaluated in each year from 2013 through 2017?
2. For each year from 2013 through 2017, how many waiver applications did the DOE recommend that EPA grant waivers for?
3. How many waiver applications did the DOE recommend that EPA not grant waivers for?
4. What is the total volume of biofuel obligation represented by those waivers for each year 2013 through 2017?
5. What is the DOE process for confirming that each applicant falls beneath the 75,000 gallon throughput capacity?
6. What offices at DOE are engaged in the analysis of each application?
7. Is any part of the analysis contracted to a non-governmental entity?
8. If so, which non-governmental entities were involved (please specify for which years)?
9. If non-governmental entities were used, what criteria was used to select the entities to ensure
 - 1) they possessed the necessary technical knowledge to determine disproportionate economic harm given the intricacies of the petroleum refining markets, biofuels markets, RIN markets, and RFS provisions, and 2) what was done to confirm that no conflict of interest existed?

Attachment 2—Member Requests for the Record

During the hearing, Members asked you to provide additional information for the record, and you indicated that you would provide that information. For your convenience, descriptions of the requested information are provided below.

The Honorable Fred Upton

1. In regard to the Enbridge Line 5 pipeline, can you ask your department of energy and reliability to actually study what would happen if this line went out for some type of duration? Particularly on the consumers.

The Honorable John Shimkus

1. Are you familiar with the Co-Optima study and what are your thoughts on it?

The Honorable Markwayne Mullin

1. Can you explain why the Office of Civil Radioactive Waste Management was left out of your last organizational chart for DOE? And who is covering that?

The Honorable Frank Pallone, Jr.

1. How many LNG export applications to Non-Free Trade Agreement countries are currently pending before the DOE?

The Honorable John P. Sarbanes

1. Does your department remain committed to the goals of the SunShot Initiative?
2. Will you maintain the same commitment within the Solar Energy Technologies Office that has been a hallmark up to this point and further commit to making sure that low-income communities are in a position to take advantage of these low-cost energy and skilled job opportunities which are available within the solar technology industry?

The Honorable Jerry McNerney

1. In regard to the resiliency of the electric grid, especially in face of the wildfires we had in California, does the DOE have tools to help ensure resilience despite some of the gaps we have in our current law?

The Honorable Paul Tonko

1. Please share with the Committee any communications between Department of Energy officials and National Energy Technology Laboratory personnel regarding the “Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units” report.

The Honorable David Loebsack

1. Does your office recommend that EPA adopt any small refinery waivers this year, and if so what waivers did you recommend?

